Commentor No. 1680: Elan Banehama

From: Elan Barnehama[SMTP:ELAN@HRTA.UMASS.EDU]
Sent: Monday, September 18, 2000 8:16:09 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: COMMENTS ON DOE PLANS FOR EXPANDED PRODUCTION OF PLU_238 FOR FUTURE SPACE MISSIONS
Auto forwarded by a Rule

Colette E. Brown
U.S. Department of Energy

Dear Colette E. Brown,

I would like to offer these comments, concerns, objections to the DOE's PLANS FOR EXPANDED PRODUCTION OF PLU_238 FOR FUTURE SPACE MISSIONS

__NASA is not doing enough to develop environmentally benign power sources for space missions. European Space Agency (ESA) has now developed high_efficiency solar cells for deep space missions. **1680-1**

__The plutonium production/fabrication process for space nuclear power missions has recently led to several worker contamination accidents. An expansion of production will only worsen this problem. **1680-2**

__Expanding the number of launches of nuclear powered space devices from Cape Canaveral on rockets with 10% failure rates will only increase the possibility of a deadly mishap. **1680-3**

__The massive cost of expanded production of plu_238 can not be justified at a time when DOE admits it needs over $300 billion to clean_up existing problems at DOE facilities. **1680-4**

Thank you,

Elan Banehama
77 Grove Ave., Leeds, MA 01053, 413.586.7701 voice

Response to Commentor No. 1680

1680-1: 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, although issues such as NASA research priorities are beyond the scope of this PEIS. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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.

1680-2: Plutonium-238 processing facilities can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Sections 4.2-4.6 of Volume 1 provide the results of the evaluation of potential health impacts that would be expected to result from plutonium-238 processing, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that the radiological and nonradiological risks associated with plutonium-238 processing would be small.

1680-3: DOE notes the commentor's concern for NASA's use of nuclear materials for space missions, although issues such as NASA research priorities are beyond the scope of this PEIS. issues such as NASA research priorities are beyond the scope of this PEIS. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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.

1680-4: DOE notes the commentor's opinion and concern about funding available for cleanup at DOE facilities.

Commentor No. 1681: David and Karen Pappel

From: Karen Pappel[SMTP:KPAPPEL@USWEST.NET]
Sent: Monday, September 18, 2000 8:32:12 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: I oppose the restart of the FFTF Nuclear Reactor at Hanford!
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Please do not do it!

David & Karen Pappel
Eugene, OR

1681-1

Response to Commentor No. 1681

1681-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1682: Jerrilynn Schroeder

From: Jerrilynn Schroeder
[SMTP:RFC_822:JERRILYNN_SCHROEDER@PARKROSE.K12.OR.US]
Sent: Monday, September 18, 2000 10:11:22 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Oppose
Auto forwarded by a Rule

I oppose the restart of FFTF Nuclear Reactor at Hanford. **1682-1**

Response to Commentor No. 1682

1682-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1683: Molly Dwyer

From: Molly Dwyer
[SMTP:MOLLY_DWYER@PARKROSE.K12.OR.US]
Sent: Monday, September 18, 2000 10:38:22 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: restart of FFTF reactor at Hanford
Auto forwarded by a Rule

I vehemently oppose the restart of the FFTF reactor at Hanford. Environmental and human health concerns should come first!!! **1683-1**

Response to Commentor No. 1683

1683-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

Commentor No. 1684: Wm David Millard

From: Millard, W David
[SMTP:DAVE.MILLARD@PNL.GOV]
Sent: Monday, September 18, 2000 10:41:32 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Please support keeping FFTF running
Auto forwarded by a Rule

I believe that FFTF can contribute significantly to our country's, and the world's, medical industry.
Please keep FFTF open

1684-1

Wm David Millard
Situation Planning & Response
PNNL __ Pacific Northwest National Laboratory
ph: 509_375_2947 email: dave.millard@pnl.gov

Response to Commentor No. 1684

1684-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1685: Gale S. F. Voyles

From: Gale Voyles[SMTP:GVOYLES@BNFLINC.COM]
Sent: Monday, September 18, 2000 10:51:40 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Cc: gsfvoyles@hotmail.com%internet;
mllee@mato.com%internet
Subject: FFTF Restart
Auto forwarded by a Rule

The restart of the Fast Flux Test Facility for the medical isotope mission and to support the PU 238 mission is vitally important to the United States. The medical isotope production process will allow further development of isotopes for medical and research needs. Let us not be dependant on foreign sources for our medical isotope needs. **1685-1**

Put FFTF back in to production of isotopes.

Gale S. F. Voyles
gsfvoyles@hotmail.com

Response to Commentor No. 1685

1685-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1686: Brett Shepherd

From: Brett Shepherd[SMTP:BSHEPHERD@GOCAI.COM]
Sent: Monday, September 18, 2000 11:06:41 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Stop creating nuclear materials
Auto forwarded by a Rule

nuclear.infrastructure_peis@hq.doe.gov

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

Dear Ms. Brown,

Until we create proper disposal methods for nuclear materials, please stop creating it. Pretty simple concept, eh? Please stop creating nuclear material at the INEEL. **1686-1**

Brett Shepherd
Network Engineer
Computer Arts, Inc.
bshepherd@gocai.com

Response to Commentor No. 1686

1686-1: The commentor's position regarding creation of nuclear waste at INEEL is noted.

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. The waste minimization program for INEEL is described in Section 3.3.11.8 of Volume 1. 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 appropriate DOE orders.

Commentor No. 1687: Arthur Doucette

From: ADoucette@Atl.carreker.com%internet
[SMTP:ADOUCETTE@ATL.CARREKER.COM]
Sent: Monday, September 18, 2000 12:21:23 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Re_establishing production capability for Pu_238
Auto forwarded by a Rule

Re: Use of Pu_238 for space based power supplies:

I am totally against this for many reasons:

Considering what happened to the Mars Polar Lander it is obvious that NASA's "one in a million" chance of the spacecraft impacting earth was grossly overstated. What if the day after Cassini crashed into the earth, impacting Manhattan, we all got to read in the papers the next day: "OOPS, the contractor was working in Lbs. and JPL was using Kilos". Prior to the Polar Lander, I'm sure no one would have believed such a inconceivably silly mistake could occur.

Since NASA must agree that the odds were really not one in a million but with just one more data point added by the ill fated Polar Lander more like one in a thousand then one must also agree that NASA's extrapolation of potential risk which was partly based on this estimate was also understated and that at least some of the concerns of those opposed to the launch/flyby turned out to be well founded. **1687-1**

I do not believe that anyone, including NASA or DOE, could or has accurately simulated the forces exerted on a non_aerodynamic 6 ton spacecraft entering the atmosphere at 42,500 MPH. I don't believe we have the technical ability to accelerate an object even a fraction of the size and shape of Cassini to over 62,000 feet/sec. on the earth's surface! As far as the forces involved, to put it in perspective, Casinni's weight is almost the same as our Apollo Command module. Apollo's re_entry speed was only about 1/2 of Casinni's potential re_entry speed. The Apollo re_entry had to

Response to Commentor No. 1687

1687-1: DOE notes the commentor's concern for NASA's use of nuclear materials for space missions and interest in the development of alternatives energy sources for space missions, although issues such as NASA's research priorities are outside the scope of this NI PEIS. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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 as planned with no release of nuclear materials.

Plutonium-238, plutonium-239, and plutonium-240 decay with emission of an alpha-particle to uranium-234, uranium-235, and uranium-236, respectively. Plutonium-241 decays with emission of an electron to americium-241. The half-lives of plutonium-238 and americium-241 are approximately 88 years and 432 years, respectively. Plutonium-238 has a much higher specific activity (number of curies per gram) than americium-241. The specific activity of plutonium-238 is approximately 5 times larger than the specific activity of americium-241. Inhalation and ingestion dose coefficients for plutonium-238 and americium-241 differ by ten percent or less.

Commentor No. 1687: Arthur Doucette (Cont'd)

be precisely flown to within a degree or so in order to keep the approach angle shallow enough that the energy of re_entry was dissipated over sufficient time to keep the shield temperatures down to a manageable 5,000 degrees F. Apollo gave up over 86,000 KiloWatts of energy during it's controlled approach, Casinni could have easily arrived at the earth's surface with that much energy or more still left. On a perpendicular trajectory it would traverse the atmosphere in a little over 10 seconds and hardly slow down at all. Does the DOE realize the destructive force of a 6 ton object moving at this speed impacting almost anywhere? What about in a densely populated area? To claim that the RTG's could withstand an impact into the earth's surface at these speeds and potential temperatures and remain intact was and is preposterous.

Given that NASA agrees that there was a risk and that the argument is really about the level of risk, where is the justification that there is anything we will learn from Saturn or the other outer planets that warrants taking this risk? Is NASA just assuming it is worth the risk when they support these deep space probes using plutonium? We have sent many deep space probes with RTG's, can NASA name just one life which has been saved or even extended a short while because of what we have learned? Could NASA list just one improvement to mankind that has come from what we have learned from ANY of our deep space probes? Can NASA point to any potential improvement to mankind that couldn't be achieved without a RTG powered space probe?

NASA believes that "Other than plutonium generators, there is no practical source of electrical power for spacecraft that go to the outer planets." Has NASA considered that maybe we shouldn't explore them until we can develop a SAFE and practical source of electrical power for deep space travel? Is it not possible that if we spent the same 3 Billion in research to develop such a safe and practical source of power that the research could also have many practical benefits to those of us back on earth? In the article by Dick Thompson (Time) he writes on this issue: "What will be lost if Cassini is canceled? As Galileo's spectacular images of Jupiter and

1687-1 (Cont'd)

Response to Commentor No. 1687

its moons showed last spring, an extended visit is really the only way to study a distant planet. Saturn's rings are perhaps the most mysterious and magnificent objects in the solar system. Its moon Titan has its own atmosphere, filled with organic chemicals; scientists suspect it's just the sort of place life could have gained a foothold. Pulling the plug on Cassini now, when we're on the verge of exploring such a place, would be a missed opportunity of astronomical proportions." While this is stirring prose there is really nothing of substance alluded to, no actual benefits to be gained. The fact is Space exploration is direct science not applied science. Any benefit we get from this is coincidental and with Space Science, any coincidental benefits are most likely to be gained only after extremely long spans of time. Therefor delaying the probes for a decade or so, until they can be made safely has no negative impact on anyone and the chance of discovering something coincidentally valuable while developing the required safe power systems is equally great so in reality, nothing is lost. Any money spent on Direct Science is a gamble and we never know the odds.

1687-1 (Cont'd)

I'm particularly not in favor of using the earth for gravity assists to the outer planets and certainly not when they are carry plutonium 238 power supplies. Several key issues are risk Vs reward and potential terminal damage to public support for space exploration. I'm sure that if Cassini had hit the earth or atmosphere, that future use of RTG's on space probes would become problematic and that deep space research in general might be significantly curtailed. I believe this would be true regardless of the measured health impact of the plutonium on board. What was the probability of Cassini hitting the earth? Certainly not high, but then not as low as NASA was saying either. The final trajectory towards the earth was planned such that in almost every failure mode of the final course correction, the failure would result in Cassini missing the earth by a wider margin then planned. The danger was in navigation errors prior to the final burn which is exactly what caused MPL to impact on Mars. When they did the final burn for the MPL it was not where they thought it was because of previous navigation errors caused by

Commentor No. 1687: Arthur Doucette (Cont'd)

improper calculation of the spacecraft's weight. The other dangers include loss of communication with the spacecraft due to mechanical damage: antenna not unfolding, micrometer impact or the not uncommon unexplained failure. Because of the path the spacecraft needed in order to use Earth as a gravity assist then failures of this type could leave Cassini in a near Earth orbit, i.e. if it didn't get all of the three specific gravity assists it needed it would never get the energy needed to accelerate to Jupiter for it's final assist to Saturn. If it got stuck in a near Earth orbit then given time its likely hood of impacting the Earth go way above the likelihood of the final course correction causing a problem. The plutonium on board would remain a problem for thousands of years.

1687-1 (Cont'd)

The second area I am in disagreement with NASA is on the toxicity of plutonium. Specifically plutonium 238 which comprised 71% of the plutonium on Cassini. (13% P239, 2% P240) _ an important point is that plutonium decays into americium and it has its own set of problems, in fact decayed plutonium is considered more dangerous then the starting material. I have included several references from respected sources, none from fringe scientists or others with their own agendas.

The first is from the Univ. of Penn. on the health risk of Plutonium based on its form:

On the other hand, plutonium inside the body is highly toxic. Solid plutonium metal is neither easily dispersed nor easily inhaled or absorbed into the body. But if plutonium metal is exposed to air to any degree, it slowly oxidizes to plutonium oxide (PuO2), which is a powdery, much more ispersible substance. Depending on the particle size, plutonium_239 oxide may lodge deep in the alveoli of the lung where it has a biological half_life of 500 days, and alpha particles from the oxide can cause cancer. Also, fractions of the inhaled plutonium oxide can slowly dissolve, enter the bloodstream, and end up primarily in bone or liver.

Response to Commentor No. 1687

Commentor No. 1687: Arthur Doucette (Cont'd)

Plutonium oxide is weakly soluble in water. If it is ingested in food or water, only a small fraction (4 parts per 10,000) is absorbed into the gastrointestinal tract. However, it may take just a few millionths of a gram to cause cancer over time. In animals, small doses induce cancer, especially in lung and bone.

Plutonium's Risk to Human Health Depends On Its Form
Last Revision Date: Thursday, 26_Aug_1999 23:27:58 EDT
Copyright 1 1994, The Trustees of the University of Pennsylvania

The point of this article is that the most dangerous form of Pu is the oxide which is what Cassini's fuel consisted of.

The next is from the DOE funded Amarillo Natl. Research Center (ANRC) which basically says extremely small particles of Pu inhaled will cause cancer:

The main danger from plutonium comes from inhalation. If inhaled, plutonium can become stuck in the tissues of the lungs (if the particles are smaller than one micron _ .00004 inches _ in diameter). Although the radioactivity of plutonium is not high, the radiation would be concentrated in a single place, and because the plutonium would be in direct contact with sensitive tissue, the alpha particles could damage the lungs, this damage would typically show up as cancer after a period of years.

ANRC The U.S. Department of Energy and the State of Texas formed the Amarillo National Research Center (ANRC) to conduct scientific and technical research, advise decision makers, and provide information on nuclear weapons materials and related environment, safety, health and non_proliferation issues.

The next is from the Lawrence Livermore National Laboratory in a very well written study on the toxicity of plutonium. This section deals with determining the risk factors, the appendix is the supporting calculations:

Response to Commentor No. 1687

Commentor No. 1687: Arthur Doucette (Cont'd)

The total effective dose equivalent defined in Limits for the Intake of Radionuclides by Workers, International Commission on Radiological Protection (ICRP) Publication 30 (Pergamon Press, Cambridge, UK, 1979), is a weighted sum of organ dose equivalents multiplied by appropriate risk weighting factors. [10] These values are based on effects observed at relatively high exposures. The usual (and conservative) assumption is that the risk of getting cancer at lower exposures is linearly related to the exposure. This risk would be in addition to the natural incidence rate of fatal cancer, which is approximately 20% for the United States population. Thus, if an individual inhaled 0.0008 milligrams of plutonium, that individual's risk of developing fatal cancer as a result of this exposure would be increased from 20% to 21%. If each of 10 individuals inhaled 0.0008 milligrams of plutonium, the probability that one of them would get cancer would be 10%, since each individual has a 1% risk. That is, the probability of a cancer appearing in an exposed population depends simply on the amount of plutonium collectively inhaled. For each 0.08 milligrams of plutonium inhaled by the exposed population (regardless of the size of the population), one additional fatal cancer would be expected to occur.

Appendix A. Risk and Dose Vs Plutonium Intake

The cancer risk associated with the inhalation or ingestion of a given amount of plutonium can be determined as the product of three quantities: (1) the activity (activity is measured in curies) of plutonium per milligram, (2) the dose (measured in rem) delivered per unit of plutonium activity taken in, and (3) the risk of cancer per unit dose of radiation delivered to the body by that plutonium. The calculations below follow that pattern.

For inhalation, we have .08 millicurie/mg X 3.1 X 10XX5 rem/millicurie X 5 X 10XX_4 Cancer/rem = 12 cancer/mg which corresponds to 0.08 mg/cancer.

For ingestion, we have .08 millicurie/mg X 52 rem/millicurie X 5 X 10XX_4 Cancer/rem = .0021 cancer/mg which corresponds to 480 mg/cancer.

Response to Commentor No. 1687

Commentor No. 1687: Arthur Doucette (Cont'd)

References for the quantities given in the expressions above:

0.08 mCi/mg: Homann, S. G., HOTSPOT Health Physics Codes for the PC, Lawrence Livermore National Laboratory, Livermore, CA, UCRL_MA_106315 (1994).

rem/mCi (inhalation), and 52 rem/mCi (ingestion; we have used , the value appropriate for plutonium oxide, for the fraction of plutonium absorbed from the GI tract into the bloodstream): Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion and Ingestion, U.S. Environmental Protection Agency, Washington, DC, Federal Guidance Report No. 11 (1988).

cancer/rem: ICRP 60 (Ref. 25).

A Perspective on the Dangers of Plutonium W. G. Sutcliffe, R. H. Condit, W. G. Mansfield, D. S. Myers, D. W. Layton, and P. W. Murphy. Lawrence Livermore National Laboratory, April 14, 1995

The problem with the previous article is it dealt with P239 in it's calculation. As it turns out P238 is far more dangerous, in fact as the following excerpt from the ATSDR shows the radiation per gram of P238 is 260 times as great as P239:

Plutonium has been released to the environment primarily by atmospheric testing of nuclear weapons and by accidents at weapons production and utilization facilities. In addition, accidents involving weapons transport, satellite reentry, and nuclear reactors have also released smaller amounts of plutonium into the atmosphere. When plutonium was released to the atmosphere, it returned to the earth's surface as fallout. Average fallout levels in soils in the United States are about 2 millicuries (mCi)/square kilometer (about 0.4 square miles) for plutonium_239 and 0.05 mCi/square kilometer for plutonium_238. A millicurie is a unit used to measure the amount of radioactivity; 1 mCi of plutonium_239

Response to Commentor No. 1687

Commentor No. 1687: Arthur Doucette (Cont'd)

weighs 0.016 gm, while 1 mCi of plutonium_238 weighs 0.00006 gm.

Agency for Toxic Substances and Disease Registry
ATSDR Public Health Statement, December 1990

If you review the formulas presented in the preceding paper you will see that there is a direct correlation of mCi/g to the toxicity. Thus where the previous formula suggests .08mg per cancer for inhaled Pu239, substituting the mCi rate of Pu238 yields .0003 mg/cancer. Thus making Pu238 260 times more lethal per gram!

I would agree that even in most re_entry scenarios, the likelihood of a catastrophe is very small, but there do exist plausible scenarios that could result in massive deaths and illness. This is the risk Vs reward issue. I've followed NASA since before the first Redstone took Carpenter on his suborbital flight. Never before, even considering the Apollo pad fire and Challenger, have I ever read or seen so many people and groups bashing NASA consistently and with such anger as over Cassini and launches containing RTG's. Simply from a public relations point of view Cassini will likely remain a net loss to NASA even if it succeeds in its planetary exploration mission. Future launches of Pu238 will continue to result in a ever growing part of the public which opposes their mission.

Sincerely,
Arthur Doucette

Response to Commentor No. 1687

Commentor No. 1688: Joyce A. Mikelson

From: Joyce A Mikelson
[SMTP:BRIGHTPRAIRIE@JUNO.COM]
Sent: Monday, September 18, 2000 12:18:09 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Opposal of FFTF startup
Auto forwarded by a Rule

Sirs: I oppose the start of the FFTF nuclear reactor at Hanford __ No more nuclear waste in the Columbia River or endangerment to the ecology and surrounding environment . There is already instability in the present holding tanks and leakage that needs to be addressed and resolved safely __ do not carry out this plan for restart __ clean up and stabilize the site for permanent shutdown. **1688-1** **1688-2** **1688-1** **1688-2**

Joyce Mikelson,
Portland, Oregon

Response to Commentor No. 1688

1688-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1688-2: 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. 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. 1689: Suzanne C. Kneeland

From: JimsoozHQ@aol.com%internet
[SMTP:JIMSOOZHQ@AOL.COM]
Sent: Monday, September 18, 2000 12:16:47 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: 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. **1689-1**

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 **1689-2**

Response to Commentor No. 1689

1689-1: 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.

Grand Teton National Park and Yellowstone National Park are approximately 139 kilometers (80 miles) and 112 kilometers (70 miles), respectively, from the boundary of INEEL. Airborne radioactive and nonradioactive pollutants that could result from implementation of the nuclear infrastructure alternatives would not contaminate Grand Teton National Park or Yellowstone National Park. As discussed in Chapter 4, Appendix H and Appendix I, for both normal operations and accidents, no significant environmental impacts are expected at distances in excess of 80 kilometers (50 miles) from the INEEL.

Waste management and cleanup efforts at INEEL are discussed in Section 3.3.11. Selection of candidate facilities at INEEL for support of DOE's nuclear infrastructure missions would not impact the cleanup missions at INEEL.

1689-2: 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.

Commentor No. 1689: Suzanne C. Kneeland (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.

1689-2 (Cont'd)

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.

1689-3

1689-4

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.

1689-5

Indeed, an otherwise lukewarm Nuclear Infrastructure

Response to Commentor No. 1689

1689-3: 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 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.

1689-4: 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, although issues such as NASA research priorities are beyond the scope of this PEIS. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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.

Commentor No. 1689: Suzanne C. Kneeland (Cont'd)

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.

1689-5 (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. As a downwinder of the INEEL site, I fear Yellowstone and Grand Teton National Parks are also unprotected from harmful airborne pollutants from INEEL. We find out more and more each day about INEEL's toxicity and lies and cover_up. I feel our community has learned a lot recently in a short amount of time, and citizens are deeply concerned about the

1689-6

1689-1

Response to Commentor No. 1689

1689-5: It is not true that resumption of plutonium-238 production constitutes a return to reprocessing. The aqueous technique 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 in portions of the complex process to extract plutonium-239. However, as discussed in PEIS Sections S.3, 2.2.3 and A.1.4, this technology 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. Plutonium-238 extraction is not reprocessing. Unlike plutonium-239, plutonium-238 is not used in nuclear weapons, but rather it would be used as a power and heat source for NASA space missions.

The Nuclear Infrastructure Nonproliferation Impact Assessment, published in September 2000, confirms that extracting plutonium-238 from irradiated targets would not undermine nonproliferation goals. In this report, DOE recognizes that proliferation concerns might be raised related to one of the technical assessment factors, "reduction in attractiveness of material forms," due to the fact that, in the extraction of plutonium-238, the remaining unconverted neptunium, a weapons useable fissile material used as target material for conversion into plutonium-238, must also be recovered (not produced), purified, and recycled. This is unavoidable (unless the United States elects to neither produce or purchase plutonium-238), and 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. However, while the fact that concerns might be raised is a valuable input to the record of decision process, it does not constitute an inconsistency with or departure from nonproliferation policy, and plutonium-238 is needed to fulfill our missions. Further, in the event that plutonium-238 production is resumed in the United States, the total separated stocks of neptunium would be reduced over time in an irreversible manner since there is a moratorium on U.S. spent fuel reprocessing. This overall reduction in a weapons-useable material would mitigate the potential concerns related to material attractiveness, and offer an additional method to pursue U.S. nonproliferation goals. DOE's proposed approach in this mission, and its rigorous nonproliferation impact assessment, demonstrate its commitment to nonproliferation policy, domestically and in the international community.

Commentor No. 1689: Suzanne C. Kneeland (Cont'd)

mess being created over there each day. This plutonium plan is only one in a long list of foolish ideas from the DOE and INEEL. It's always so easy to say, "We didn't know that much back then...we know a lot more now," while explaining away past mistakes. Then we line up more foolish ideas that we do not know the consequences of until generations later. Everyone's always looking for the "cure" for cancer or AIDS...let's now look at the causes of these diseases which can be the direct result of living too close to a Nuclear Reactor Test Site or DOE facility. I am outraged at the poisoning of children and adults in Oak Ridge,Tennessee and the children in Winona, TX. People are dying every day because we are poisoning ourselves and our children in this mad race to produce bombs that will surely kill us all accidentally or on purpose. As a teacher and caretaker of children, I implore you to stop the madness of plutonium production. Give those INEEL folks jobs cleaning up the huge messes safely.

1689-1 (Cont'd)

1689-7

1689-1

Thank you for your time.
Sincerely,
Suzanne C. Kneeland
PO Box 11951
Jackson, WY 83002
jimsoozhq@aol.com

Response to Commentor No. 1689

The juxtaposition of Fluorinel Dissolution Process Facility (FDPF) in INEEL Building 666 to wet storage of highly enriched uranium Navy spent nuclear fuel, and its previous mission of reprocessing spent nuclear fuel, were rigorously and objectively evaluated in the Nuclear Infrastructure Nonproliferation Impact Assessment published in September 2000. In no uncertain terms, this report discusses the proliferation concerns raised in the areas of facilitating cost-effective international monitoring and supporting negotiation of a verifiable Fissile Material Cutoff Treaty (FMCT), and outlines what is needed to mitigate these concerns. This is a valuable input to the record of decision process.

Most of the concerns and uncertainties surrounding the use of FDPF are associated with its history as a defense programs facility and the resulting lack of transparency that could be afforded in the event that international monitoring becomes desirable under an FMCT. This is a different set of concerns than those expressed in the comment. The fact is, that since it is well known that FDPF has a long history of Navy defense missions, and since the described mission (plutonium-238 extraction) in the PEIS does not involve the production of special fissile material, sufficient transparency could possibly be provided by a managed access regime that would meet the requirements of FMCT verification. If this could be done, the aforementioned concerns would be mitigated.

1689-6: 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

Commentor No. 1689: Suzanne C. Kneeland (Cont'd)

Response to Commentor No. 1689

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.

1689-7: The commentor's positions on plutonium production and health impacts of nuclear reactors are noted. As discussed in Section 1.2.2 of Volume 1, under the nuclear infrastructure alternatives, plutonium-238 would be produced to support NASA's deep space probes. Plutonium-238 is not used to make nuclear weapons.

Impacts on public health in the Oak Ridge Area that would occur under implementation of the nuclear infrastructure alternatives are discussed in Chapter 4 of Volume 1 (e.g., Sections 4.3.1.1.9, 4.4.1.1.9) and Appendixes H through J of Volume 2. Implementation of the alternatives would not be expected to result in latent cancer fatalities among populations residing in the potentially affected area surrounding the Oak Ridge Reservation.

Commentor No. 1690: Chip Ruberry

From: cruberry@miicor.com%internet
[SMTP:CRUBERRY@MIICOR.COM]
Sent: Monday, September 18, 2000 12:34:35 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: nuclear comment deadline
Auto forwarded by a Rule

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

Dear Ms. Brown,

I support Alternative 5 in which production of plutonium would not be re_initiated. We need to focus on cleaning up our past mistakes, rather than creating new ones. **1690-1**

Chip Ruberry
Boise, ID

Response to Commentor No. 1690

1690-1: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF. DOE also 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. 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.

Commentor No. 1691: Barbara LaMorticella

From: Barbara LaMorticella[SMTP:BARBALA@TELEPORT.COM]
Sent: Monday, September 18, 2000 1:40:16 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Public Comment on Hanford Fast Flux Reactor
Auto forwarded by a Rule

This is to comment on the Environmental Impact Statement_
NIPEIS

Please do not restart the Fast Flux Test Facility nuclear reactor at Hanford. There is no safe way to dispose of the waste, and it will go on causing death and destruction in the biological chain for hundreds of thousands of years. Help make 2000 the year we begin to turn away from nuclear folly and from degrading the Columbia River and the northwest. **1691-1** **1691-2**

Sincerely,

Barbara LaMorticella

Response to Commentor No. 1691

1691-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1691-2: 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.

Commentor No. 1692: Robert LaMorticella

From: GenIron@aol.com%internet
[SMTP:GENIRON@AOL.COM]
Sent: Monday, September 18, 2000 1:52:58 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Public Comment on Restart of Hanford Fast Flux Reactor
Auto forwarded by a Rule

To address the environmental impact statement__ NIPEIS

Restarting the Fast Flux Test Facility at Hanford will not help our defense but the opposite__ it will make us weaker, by weakening our biological fabric. **1692-1**

No technology can contain the nuclear waste generated, and no benefits justify the risk of making the Pacific Northwest a biological dead zone. Please help keep the future from judging us wickedly foolish. Please don't allow the reactor to reopen! **1692-2** **1692-1**

Robert LaMorticella

Response to Commentor No. 1692

1692-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF. No component of the proposed action is for the purpose of supporting any defense- or weapons-related mission.

1692-2: 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.

Commentor No. 1693: Dave Bjur

From: Dave Bjur[SMTP:DAVE@SERVANT.ORG]
Sent: Monday, September 18, 2000 3:08:40 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Please re_start the FFTF
Auto forwarded by a Rule

I would like to respectfully ask you to please re_start the FFTF. This is necessary for both medical and energy research. **1693-1**

Dave Bjur
dave@servant.org

Response to Commentor No. 1693

1693-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1694: Ellen M. Eddy

From: EDDYELLEN@aol.com%internet
[SMTP:EDDYELLEN@AOL.COM]
Sent: Monday, September 18, 2000 3:19:47 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

To whom it may concern:
I support the restart of FFTF for the production of medical isotopes. It is very important that these isotopes are available to help people. Please expedite this project. **1694-1**

Sincerely,

Ellen M. Eddy, 11736 Scott Creek Drive SW, Olympia WA 98512

Response to Commentor No. 1694

1694-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1695: Paul A. Eddy

From: EDDYELLEN@aol.com%internet
[SMTP:EDDYELLEN@AOL.COM]
Sent: Monday, September 18, 2000 3:19:49 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: FFTF
Auto forwarded by a Rule

This is a message to state that I support the restart of FFTF for the production of medical isotopes. I feel that these isotopes will help many ill people and that it is in our interest to provide these isotopes. **1695-1**

Sincerely yours,
Paul A. Eddy
11736 Scott Creek Drive SW
Olympia WA 98512

Response to Commentor No. 1695

1695-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1696: Brian Setzler

From: Brian Setzler[SMTP:BSETZLER@YAHOO.COM]
Sent: Monday, September 18, 2000 3:47:28 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Citizen comment
Auto forwarded by a Rule

I'm writing to voice my opposition to restarting the FFTF reactor at Hanford. **1696-1**

I live in Portland, Oregon with my family, friends and neighbors and am particularly concerned about adding more nuclear waste and pollution to what is arguably the nation's most polluted place. **1696-2**

Restarting the FFTF will add more wast to Hanford's leaking and explosive waste holding tanks.

In 1995 the Department of Energy promised (in the Hanford Clean_up Agreement) to shut down FFTF and use the money saved for higher priority Clean_Up. Instead, USDOE has spent more than $100 million of clean_up money keeping FFTF on hot standby. **1696-3**

The purported reason for restarting FFTF is to obtain Plutonium_238 yet NASA has stated they have no need to purchase Plutonium_238 for the specific space mission used to justify FFTF restart. How can it be economically viable to operate FFTF for Pu_238 if there are no buyers? And besides, we haven't even been told the cost of the restart. How can the public make an informed decision without knowing the cost? And why was NASA's decision not included in the PEIS study? **1696-4** **1696-5** **1696-4**

Finally, Northhwest citizens have repeatedly voiced their concerns over FFTF _ telling USDOE to shut it down and get Hanford cleaned up. Why does the USDOE continue to ignore Northwest citizens? Honor your commitment to clean_up and shut down FFTF! **1696-3**

Response to Commentor No. 1696

1696-1: DOE notes the commentor's opposition to Alternative 1, Restart FFTF.

1696-2: As identified in Section 4.3.1.1.13 of the NI PEIS, the restart of FFTF would generate about 63 cubic meters of additional radioactive waste (e.g., solid low-level radioactive waste) annually, in addition to nonhazardous wastes. This would account for about 2,205 cubic meters of additional radioactive waste to be generated over the 35-year period of nuclear infrastructure operations and is small in comparison to the waste generated by current Hanford activities. This waste would not be stored in the high-level radioactive waste tanks. 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.

1696-3: DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are 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.

All environmental parameters (e.g., air, soil, surface water, groundwater, vegetation, animals, etc.) in and around the Hanford Site are monitored on a set frequency. The information is available to the public in annual monitoring reports. No food or water restrictions are currently in place outside the Hanford Reservation as a result of Hanford activities.

Commentor No. 1696: Brian Setzler (Cont'd)

Hanford's high_level nuclear waste tanks are already leaking radioactive waste into the groundwater, which is moving closer to the Columbia River and threating the life of the river and the people downstream. With this real and imminent danger, how can anyone reasonably propose restarting a reactor that will add more waste to this ecosystem?

1696-3 (Cont'd)

1696-2

40 years of history have established that USDOE cannot be trusted to disclose the truth. In June, during the Hanford fire, USDOE lied about Plutonium realeases. For years ago, USDOE promised independent regulation of reactors, including FFTF. USDOE has lied and broken its promises. How can we trust you to run an unsafe, unregulated reactor?

1696-3

Do not restart the FFTF!!!!!!

1696-1

Brian Setzler
4608 NE Beech Street
Portland, OR 97213
503_287_1798

Response to Commentor No. 1696

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.

As discussed in Appendix N, section N.3.2, implementation of any of the DOE missions at Hanford would not be in conflict with the land use plan or the Tri-Party Agreement. Additionally, DOE has made a commitment that implementation of the Record of Decision will not divert or reprogram budgeted funds designated for Hanford cleanup, regardless of the alternative(s) selected.

As identified in Section N.4.2 of the NI PEIS, the subject of independent regulation is not within the scope of the NI PEIS but is an operational issue to be considered only if FFTF restart is selected in the Record of Decision.

1696-4: The May 22, 2000, correspondence from NASA to DOE identifies that NASA no longer has a planned requirement for small radioisotope thermoelectric generator (SRTG) power systems. This does not mean that NASA no longer requires DOE to provide the necessary plutonium-238 to support deep space missions. Rather, the suspension of SRTG development efforts was conducted in order to permit reprogramming of funds to support development of a new radioisotope power system based on a Stirling technology generator. This new radioisotope power system, referred to in the subject correspondence, requires 1/3 less plutonium as its fuel source. However, the Stirling technology is developmental and NASA has requested in a September 22, 2000 letter to DOE that the plutonium-238 needed for large RTG may be

maintained as a backup. Section 1.2.2 of Volume 1 was revised to further clarify the purpose and need for reestablishing a domestic plutonium-238 production capability to support NASA space exploration missions.

1696-5: 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. 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. 1697: Gary E. Richardson Snake River Alliance

From: Gary Richardson
[SMTP:GARY@SNAKERIVERALLIANCE.ORG]
Sent: Wednesday, September 20, 2000 11:34:32 AM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Fw: ATTN: Collette Brown
Auto forwarded by a Rule

_____ Original Message _____
From: Gary Richardson
To: Nuclear.Infrastructure_PEIS@hq.doe.gov
Sent: Monday, September 18, 2000 4:35 PM
Subject: ATTN: Collette Brown

Attached are the comments of the Snake River Alliance in MS Word format. A hard copy of these comments plus attachments and petitions signed by more than 200 persons supporting our statement have been mailed via the US Postal Service today.

Gary E. Richardson
Executive Director
Snake River Alliance

September 18, 2000
Ms. Colette Brown
DOE, Office of Space and Defense Power Systems

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

Dear Ms. Brown,

The following comments are submitted on behalf of the 1,300 members of the Snake River Alliance_an Idaho_based, grassroots group working for peace and justice, the end of nuclear weapons production and responsible solutions to nuclear waste and

Response to Commentor No. 1697

Commentor No. 1697: Gary E. Richardson (Cont'd) Snake River Alliance

contamination. We have acted as the citizen watchdog of activities at the Idaho National Engineering and Environmental Laboratory for 21 years.

Your department's proposal to expand the civilian nuclear infrastructure raises significant nuclear weapons proliferation and environmental issues. INEEL is already one of the most contaminated areas in America. The Department's recent estimate on cleaning up our site is $22 billion over 50 years. In addition, we have approximately 400 individual Superfund sites within the 890_square_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 more security scandals. **1697-1**

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 highly dangerous waste form. **1697-2**

Overall, the current PEIS is seriously flawed: It fails to justify the need for expanding the civilian nuclear infrastructure when balanced against the additional waste that would be generated at major DOE facilities and against this nation's non_proliferation policy. Many of the alternatives analyzed are simply unreasonable. The DOE has looked at many alternatives in place of a wide range of alternatives. **1697-3**

Unreasonable alternatives and analysis
This PEIS, while analyzing many alternatives when all the permutations of the various alternatives are factored, does not necessarily analyze a wide range of alternatives as required under the National Environmental Policy Act. It is clear, especially when **1697-4**

Response to Commentor No. 1697

1697-1: The commentor's position on generation of nuclear waste at INEEL is noted. Use of facilities considered in the NI PEIS would not impact the cleanup missions at their respective sites.

1697-2: 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 1050 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.

1697-3: DOE notes the commentor's opinion concerning the justification of the purpose and need for the DOE missions. DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent with its mandates under the Atomic Energy Act. In doing so, it established two expert bodies, the Expert Panel and the NERAC. In 1998, the Expert Panel, which convened to forecast future demand for medical isotopes, estimated that the expected growth rate of medical isotope use during the next 20 years would range from 7 to 14 percent per year for therapeutic applications, and 7 to 16 percent per year for diagnostic applications. These findings were later reviewed and endorsed by NERAC, established in 1999 to provide DOE with expert, objective advice regarding the future form of its isotope research and production activities. DOE has adopted these growth projections as a planning tool for evaluating the potential capability of the existing nuclear facility infrastructure to meet programmatic requirements. In the period since the initial estimates were made, the actual growth of medical isotope use has tracked at levels consistent with the Expert Panel findings Section 1.2.1 of Volume 1 was revised to incorporate this information and to clarify DOE's role in fulfilling the U.S. research and commercial isotope production needs.

Commentor No. 1697: Gary E. Richardson (Cont'd) Snake River Alliance

examining alternative 2, that an attempt was made to throw in as many alternatives as possible, even if they contradict the overall stated intent of expanding the nuclear infrastructure. Alternative 2 involves using existing DOE research reactors to accomplish the stated mission to the extent possible, even if the change in course over the current mission of these reactors as outlined in the PEIS diminishes the overall civilian nuclear infrastructure. For instance, use of INEEL's ATR under alternative 2 would involve plutonium_238 production, but would strip ATR of its current medical and industrial isotope production. Production of these isotopes under current operation represents two_thirds of the isotopes the DOE expects an increased need for as outlined in the PEIS. Because alternative 2, particularly as it concerns the use of ATR, would diminish the DOE's current civilian nuclear infrastructure mission, it cannot be said to be a reasonable alternative and therefore should be dropped from consideration in the final EIS. Including this alternative in the PEIS is an admission that the plutonium production mission is really your only concern and that the supposed justification for other isotope production is simply intended to make this civilian infrastructure PEIS appear more appealing and important to the public.

1697-4 (Cont'd)

Furthermore, all alternatives involve breaking up the missions: target fabrication, storage, irradiation, and (to a degree) target processing. This also is unreasonable as it involves transport of nuclear materials. For instance, under alternative 1, option 2, the neptunium oxide would be shipped for SRS to INEEL for target fabrication; the targets would then be shipped to Hanford for irradiation; and then returned to INEEL for separation. Why break up the missions to this extent other than to spread the mess around? If the mess can be spread out around DOE facilities, then it is possible for the additional waste to be considered insignificant (especially considering the amount already stored and generated at facilities like Hanford and INEEL) by site while the overall amount of generated waste is far from insignificant. Unless a clear rationale for breaking up the missions can be provided in the revised draft PEIS, then these options should also be dropped from consideration. This also is an

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

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

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

instance of throwing in many options to attempt to satisfy a wide range of alternatives when it is instead many alternatives within a narrow context.

In addition, it is possible that a hybrid of various alternatives would end up being selected as the preferred alternative. This selection method was recently criticized by the National Academy of Sciences. Because the preferred alternative could end up looking nothing like any one of the individual alternatives analyzed, it becomes difficult for the public to be confident of the analyses.

1697-4 (Cont'd)

Waste generation and management at INEEL (4.3.2.1.13)
First and foremost, the term "high_level waste" is not used to describe the liquid waste stream resulting from processing the irradiated targets. How is this possible? High_level waste is a product of the operation (aqueous reprocessing) described in the PEIS for extracting the plutonium. Previous use of this technology at INEEL's FDPF facility resulted in approximately 8 million gallons of liquid high_level waste that has since been converted to calcine. The production of this waste stream at INEEL raises serious environmental management concerns.

Furthermore, the DOE has previously inventoried liquid waste in gallons. By using cubic meters by year (table 4_35) to represent the amount of liquid waste generated, the DOE is attempting to portray the amount generated as relatively small. If a conversion is done to gallons, the measure normally used by the DOE, approximately 288,000 gallons of high_level liquid waste will be generated at INEEL over the 35_year life of the project. If the current PEIS were to accurately classify newly generated liquid waste as high_level, it would of course be enormously significant.

1697-5

There is no place to store the HLW that will be produced. The current INEEL tank farm is aging, leaking, and will eventually be closed. The tanks are well beyond their design life and are not suitable for storage of new HLW. In all probability, new sets of tanks would have to be built for the Pu_238 extraction. The PEIS must

It is the current United States policy that clean, safe, reliable nuclear power continue as a viable component of the United States' energy portfolio. In recognition of this need, the United States has 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 affordable energy supplies. An enhanced DOE nuclear facility infrastructure is required to support such nuclear energy research and development for civilian applications.

The NI PEIS provides an estimate of waste generation impacts associated with each of the alternatives proposed for the production of medical, industrial and research isotopes, plutonium-238, and nuclear research and development. Any additional wastes generated in support of these missions would be managed in a safe and environmentally protective manner and in compliance with all applicable Federal and state laws and regulations, and applicable DOE orders.

Nonproliferation is not included in the NI PEIS, but is discussed in a separate nonproliferation impact assessment report. The technology that is discussed in the NI PEIS 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. policy prohibiting reprocessing.

1697-4: DOE has undertaken to analyze a range of reasonable alternatives in the NI PEIS as required by NEPA (40 CFR 1502). Alternative 2, Use Only Existing Operational Facilities, represents a reasonable alternative that is keyed to the plutonium-238 mission. Under this alternative production of medical and industrial isotopes and support of nuclear research and development in DOE reactors and accelerators would continue at No Action Alternative levels, although near term growth could be limited under some options. It should be noted that variation in the consequences of an alternative does not make an alternative unreasonable, rather it provides an additional basis for selection of one alternative over another by the decision-maker.

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consider the costs, timelines, and implications of constructing new HLW storage facilities at INEEL.

1697-5 (Cont'd)

The PEIS and US non_proliferation policy
A return to production of plutonium_238, 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 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 the DOE is not fully committed to ending reprocessing. The international community cannot be expected to trust the DOE's civilian_mission claim when an agency devoutly committed to development of weapons uses a nuclear weapons technology at a weapons facility.

1697-6

If the FFTF is restarted, the preferred fuel is highly enriched uranium (HEU) and mixed (plutonium) oxide fuel (MOX). It is against US policy to use HEU and the use of MOX fuel is still being debated. Use of HEU as fuel violates non_proliferation policy and agreements with international governments. HEU (enriched to 93%) is currently being used at the ATR. Efforts must be taken to abandon that use in order to conform to US non_proliferation policy. In addition, FFTF is an aging breeder reactor and use of this facility is inconsistent with

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The various alternatives and options have different transportation requirements. These differing requirements resulted from DOE's desire to evaluate those irradiation, processing, and storage facilities that are reasonably able to accomplish the nuclear infrastructure missions as set forth in the NI PEIS. This was not done in order to minimize the impact of waste generation and disposal. If fact, the cumulative impact of waste generation and disposal are specifically addressed in Sections 4.8.1.4, 4.8.2.4, and 4.8.3.5 for ORR, INEEL and Hanford, respectively.

Section 1.3 of Volume 1 states that in addition to the range of reasonable programmatic alternatives evaluated in the NI PEIS, DOE could choose to combine components of several alternatives in selecting the most appropriate strategy. It should be noted, however, that if such an alternative were selected, it would be bounded by the range of reasonable alternatives analyzed in the NI PEIS.

1697-5: The DOE Manual 435.1. Radioactive Waste Management defines high level radioactive waste as the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation. DOE has prepared an implementation guide to DOE M 435.1 to assist in implementing the requirements contained in that manual. For this particular requirement, the definition of high-level radioactive waste, the guide is intended to facilitate the classification of indefinite waste as to whether or not they are high-level radioactive waste. It is recognized that the definition of high-level radioactive waste is not precise and is essentially a source-based definition that also alludes to concentrations of a given waste stream. Page II-8 of this guide notes that for the purpose of managing high-level waste under DOE M 435.1-1 [sic], spent nuclear fuel includes spent driver elements and/or irradiated target elements that contain transuranium elements. This statement was included in the guide because the concentrations of long-lived isotopes are likely to be somewhat high during reprocessing and it also meets the source-based definition. As a result of reviewing this guide and to address the comments raised, DOE is considering whether the waste from processing of irradiated neptunium-237 targets should be classified as high-level radioactive waste and not transuranic waste. As a result, the Waste Management sections (i.e., Sections 4.3.1.1.13; 4.3.2.1.13; 4.3.3.1.13;

US policy to discourage use of this special class of reactors_capable of producing more plutonium than is consumed. The only legitimate course for FFTF is deactivation, similar to EBR_II only with a firm schedule and serious effort.

1697-6 (Cont'd)

The fact that certain alternatives raise significant non_proliferation issues, especially the restart of FDPF involved in several options within alternatives 1 through 4, is more than reason enough to drop these alternatives from consideration in a revised Draft PEIS.

Resource Conservation and Recovery Act issues involved in restarting FDPF
INEEL's reprocessing operation at FDPF was shut down in 1989 due to environmental noncompliance (see enclosed newspaper clippings). The piping associated with the operation was not double contained and therefore operation of the reprocessor violated the Resource Conservation and Recovery Act. Leaky piping is an issue of concern at INEEL, considering that past leaky piping at the high_level waste tank farm has led to the release of approximately 38,000 gallons of high_level waste into our environment. This cleanup effort involving several hundred thousand cubic meters of contaminated soil at INEEL has been delayed due to the complexity of integrating cleanup of this contamination with treatment of the high_level waste tanks.

1697-7

Are we now to assume that this problem has been resolved? It was surprising to read in the cost estimate for the various alternatives that use of FDPF would be significantly cheaper than use of the other reprocessing facilities analyzed in the PEIS. The DOE was still working on bringing this facility up to code when President Bush officially halted reprocessing on non_proliferation grounds in 1992. A Resource Conservation and Recovery Act permit would be necessary to operate this facility as outlined in the PEIS. What are the plans for obtaining this permit? Because of the danger involved in extraction of plutonium through aqueous reprocessing and the difficulty of managing liquid radioactive waste as mentioned above, it would also be necessary to conduct a separate Environmental

and 4.4.3.1.13) of this NI PEIS have been revised to reflect this different classification from what was assumed in the draft NI PEIS. As discussed in these revised sections, irrespective of how the waste is classified (i.e., transuranic or high-level radioactive waste), the composition and characteristics are the same and the waste management (i.e., treatment and on-site storage) for this NI PEIS would be the same. In addition, even if the waste is managed as high-level radioactive waste it would have no impact on the existing high-level radioactive waste management infrastructure (e.g., high-level waste storage tanks), since the high activity waste from processing of the targets would be initially stored and vitrified within the processing facility (i.e., FMEF, REDC, or FDPF).

1697-6: 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 and heat source for NASA space missions. The technology that is discussed in Sections S.3, 2.2.3 and A.1.4 of the NI PEIS 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 Nuclear Infrastructure Nonproliferation Impact Assessment, published in September, 2000, 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. 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.

The use of mixed oxide or highly enriched uranium to fuel the FFTF has been rigorously evaluated in the Nuclear Infrastructure Nonproliferation Impact Assessment. This report confirms that the manner in which these fuels would be used, as described in the PEIS, is consistent with nonproliferation policy. In the event that a decision is made to restart FFTF, the first six years of operation would use existing onsite mixed oxide (MOX) fuel. DOE expects that an additional 15-year supply of mixed oxide fuel in Germany could be available for FFTF. MOX fuel

Commentor No. 1697: Gary E. Richardson (Cont'd) Snake River Alliance

Impact Statement on restart of this facility.

A questionable need for Pu_238
It is not clear whether any Pu_238 will be required in the future. NASA wrote a letter to the DOE, dated 22 May 2000, regarding production of Thermoelectric Generators (powered by Pu_238). The letter is a modification to a Memorandum of Understanding from 1991. The key part of the NASA letter is:
"As a result of the proposed DSS program changes, NASA Headquarters no longer has an identifiable planned requirement for Small Radioisotope Thermoelectric Generator (SRTG) power systems. Therefore NASA Headquarters requests that all SRTG development efforts for DSS spacecraft missions be halted. In addition, investigation into the utilization of the ES and Multi_Hundred Watt systems for DSS applications should be stopped." **1697-8**
This letter implies that there is no future need for Pu_238 by NASA beyond current missions for which they already have Pu_238 power supplies. This view is shared by 15 elected officials who publicly stated their opposition to startup of the FFTF in a 1997 letter to President Clinton (enclosed).

Public concern for the possibility of re_entry into the atmosphere of a Pu_238 power supply is providing impetus to develop alternative power supplies. The numbers in the draft PEIS for Pu_238 needs appear to be based on historical trends and not on what NASA really needs. It is essential that the PEIS provide incontrovertible proof that, in fact, NASA has a need for Pu_238 for the next 35 years.

Inadequate comment period
The non_proliferation assessment was originally due to be released at the time of the PEIS. We did not receive it until one week prior (9/11/2000) to the end of the comment period. This is an indication of how little serious attention the DOE currently pays non_proliferation_it is given less consideration than socio_economic impacts analyzed in the PEIS. **1697-9**

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does not use highly enriched uranium. Further, use of the Hanford MOX fuel would dispose of a significant U.S. stockpile of highly attractive fresh plutonium fuel by conversion to spent fuel through irradiation in FFTF. This represents a safe, low-cost, high benefit opportunity to reduce U.S. civilian plutonium without chemical or bulk processing. Use of the German MOX represents a similar advantage with respect to the German stockpile of separated civilian plutonium. During the period of MOX fuel use, in support of U.S. nonproliferation policy directives, DOE's Office of Nonproliferation and National Security would undertake a study under RERTR to consider the technical feasibility of using low enriched uranium to fuel the FFTF. Under this nonproliferation protocol, if use of low enriched uranium fuel is found infeasible in FFTF for meeting assigned missions, policy would allow DOE to subsequently procure highly enriched uranium fuel for use in FFTF. Again, this approach is consistent with U.S. nonproliferation policy.

1697-7: The FDPF was closed because it no longer had a mission (i.e., reprocessing spent nuclear fuel). At the same time when FDPF was operational, it was just one of several INTEC facilities that sent waste to the INTEC liquid waste handling system. The INTEC liquid waste handling system did have hazardous waste compliance issues associated with it. However, because the INTEC waste handling system was and is used by other INTEC processes, it was necessary for DOE to complete extensive upgrades to that system to meet state and Federal hazardous waste requirements even though the FDPF was shut down for other reasons. In addition, several of the individual systems are currently in the process of being permitted in accordance with the Resource Conservation and Recovery Act (RCRA). Other portions of the system e.g., the INTEC Tank Farm) will not be permitted and will be closed in accordance with RCRA requirements.

If chosen for target storage and processing operations, DOE believes that this facility will meet the criteria to safely conduct these processes without impact to the environment. The FDPF would be upgraded, as necessary, and associated waste handling system would comply with RCRA . This NI PEIS provides the NEPA coverage for the FDPF for activities described.

1697-8: The May 22, 2000, correspondence from NASA to DOE identifies that NASA no longer has a planned requirement for small radioisotope

Commentor No. 1697: Gary E. Richardson (Cont'd) Snake River Alliance

Considering all the problems inherent in the restart of FFTF and the DOE's reprocessing facilities, we urge you to either address these problems more adequately in a revised draft PEIS or choose alternative 5 in the current PEIS and commence shutdown of the FFTF. Thank you for the opportunity to comment on this proposed plan. **1697-9 (Cont'd)** **1697-10**

Respectfully submitted,

Steve Hopkins
Program Associate
Snake River Alliance
PO Box 1731
Boise, ID 83701
Comment _ Infrastructure EIS

Snake River alliance 5 18 September, 2000

Response to Commentor No. 1697

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

1697-9: The nuclear nonproliferation impacts of proposed actions are not required by NEPA and CEQ regulations to be included in a PEIS. 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.

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.

1697-10: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Commentor No. 1697: Gary E. Richardson (Cont'd) Snake River Alliance

PETITION in opposition to
Plutonium production
PROPOSED AT THE IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

The use of building '666' to produce plutonium at the Department of Energy's Idaho National Engineering and Environmental Laboratory poses unacceptable hazards to human health and the environment. Plutonium is one of the most toxic substances known to man, and the current plan to produce more is unjustifiable. **1697-11** **1697-8**

Restarting this highly contaminated facility at INEEL would produce a large quantity of dangerous and difficult to contain liquid radioactive waste. Past leakage of this type of waste currently threatens the Snake River Aquifer beneath the site. The Snake River Aquifer is Southern Idaho's number one source of water and must be protected. INEEL already has a tremendous nuclear waste problem, and production of more would make an already difficult cleanup job more difficult. **1697-2**

We, the undersigned, demand that you abandon the plutonium production mission at INEEL as outlined in your recent environmental assessment on expanding the nuclear infrastructure in the United States. Here in Idaho we are proud of our world famous potatoes and would prefer to remain known for an agricultural rather than a plutonium economy. Produce potatoes not plutonium. **1697-8**

Sincerely,

Signature	Print Name	Complete Mailing Address
X	Frank Sykes	1921 N. 33rd
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X	LORI FRISK	3911 ALBION
Town/State/Zip: BOISE ID 83703	Phone: 333-8974	Email: FRISKY@PRIMENET.COM
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Town/State/Zip: BOISE, ID 83702	Phone:	Email: GREEKS@MICRON.NET
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Please Return completed petitions to: Snake River Alliance, PO Box 1731, Boise, ID 83701
Boise: Call 208/344-9161; Ketchum 208/726-7271, Pocatello 208/234-4782

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1697-11: DOE notes the concern expressed in the comment on the potential environmental and health impacts of INEEL Building-666 use in NI PEIS alternatives. Building-666 at INEEL is divided into two parts, the fuel storage facility and FDPF. The FDPF is a candidate storage and processing facility for plutonium-238 production. The impacts to human health and the environment from storage and processing activities are presented in Section 4.4.2 of the NI PEIS. All impacts on human health to workers and the general public, both during normal operations and from postulated accidents, are shown to be small. Impacts to all other environmental resources are also shown to be small.

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	Andrew Elliot	1622 S Lusk St.
Town/State/Zip	**Phone**	**Email**
Boise ID 83706	381-8331	aelliot2wo@aol.com
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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	Eric Lecut	1198 Shenandoah
Town/State/Zip	**Phone**	**Email**
Boise ID 83712		vinylove@uswest.net
X [signature]	Jonathan Gardner	1718 N. 9th #5
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X [signature]	Michelle Pleasinger	1063 Ustick Boise Id 83704
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	658-1657	
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Sincerely,

Signature	Print Name	Complete Mailing Address	Town/State/Zip	Phone	Email
X [illegible]	Steve Hopkins	914 Robb	Boise, ID 83702	208/342-8216	
X [illegible]	David Haney	2003 N. 28TH	Boise ID 83703	208-367-0629	
X [illegible]	Gary E. Sholtz	5215 Latigo Boise ID 83709		208 362 9134	
X Sue Bell	Sue Bell	1483 E Carpenter.	Boise Id 83706	342-2366	
X [illegible]	Seth Sarsky	1721 N 22nd St.	Boise ID 83702	336-2380	mtnman@micron.net
X [illegible]	Jeffery A. Middleton	5341 Wagonmaster	Boise ID 83716	(208) 381-0476	JKmosaic Juno.com
X [illegible]	[illegible]	1689 [illegible]	Meridian ID	208-885-9467	[illegible]@Juno.com

Please Return completed petitions to: Snake River Alliance, PO Box 1731, Boise, ID 83701
Boise: Call 208/344-9161; Ketchum 208/726-7271; Pocatello 208/234-4782

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Sincerely,

Signature	Print Name	Complete Mailing Address	Town/State/Zip	Phone	Email
X [illegible]	Elizabeth Paul	655 Plantation Lane	Boise ID 83703	853-4435	
X [illegible]	Patrick Sullivan	1430 SE 14th Apt. 211	Portland, OR 97214	(503) 421-6709	patrick@teleport.com
X Maria C. Gooden	Maria Gooden	702 McKinley St	Boise Id 83712	433-9059	[illegible]@hotmail.com
X [illegible]	Brent Marchbanks	1207 N. 14	Boise Id 83702	344-5896	bmarchbanks@execu.net
X [illegible]	J. Hammer	645 Park	Emmett Id 83617	365-5493	[illegible]@hotmail.com
X Alethea Hammer	Alethea Hammer	645 E. Park Emmett, Id 83617	Emmett, Id. 83617	365-7200	
X [illegible]	Crystal Haynes	1318 N 11th St Boise 83702		338-7722	

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Sincerely,

Signature	Print Name	Complete Mailing Address
X Saundra Unzicker	Saundra Unzicker	1757 Country Terrace Meridian, ID 83642
Town/State/Zip	Phone	Email
	884-1336	
X	Michael Eisenbrandt	2585 N 15th St #204
Boise ID 83702	336-6092	mjeisenbrandt@yahoo.com
X	Torrie Martindale	2585 N 15th Apt #204
Boise, ID 83702	336-6092	CHAIZUTIO@KTVB.NET
X Jody L Mahnken	Jody L Mahnken	1432 N. Meridian Rd.
Meridian ID 83642	887 7847	Mahnkenj@juno.com
X Carl Mothiet	Carl Mothiet	2018 N.Y. Ave.
Union City N.J. 07087	(201) 866-0772	
X Mary Owens	Mary Owens	Nory2210@yahoo
Boise ID 83709	(208) 362-2256	1638 S. Lemhi
X Erin Owens	Erin Owens	702 Mill St #2
Reno NV 89506	(775) 786-8434	

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Sincerely,

Signature	Print Name	Complete Mailing Address
X Heidi Bauknecht	Heidi Bauknecht	2163 S Hilton St
Boise, ID 83705	426-9484	Vera4paws@cs.com
Town/State/Zip	Phone	Email
X Dave Eisenbrandt	David Eisenbrandt	2168 S. Hilton St.
Boise, ID 83705	426-9454	Vera4paws@cs.com
X Eltoria L Henderson	Eltoria L. Henderson	1324 Vista Drive
Emmett	365-5840	tonyhenderson@integrityonline4.com
X John R. Henderson	John R. Henderson	1324 Vista Dr
Emmett, ID 83617	208-365-5840	johnhenderson@integrityonline4.com
X Mary Ellen Ryder	MARY ELLEN RYDER	3594 IMMIGRANT PASS
BOISE, ID 83716	208 345-7437	
X Kimberly Davis	Kimberly Davis	103 N. Raymond Pl
Boise Ida 83704		
X Barbara J Davis		163 E Court
Eagle ID 83616	208 549-8255	BARBARA DAVIS

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	PETER RYDER	3594 IMMIGRANT PASS
Town/State/Zip: BOISE 83716	Phone: 345-7477	Email:
X [signature]	DALE SIMS	1016 W. FRANKLIN #1 BOISE ID 83702
Town/State/Zip:	Phone:	Email:
X [signature]	BRANDY MURDOCH	1211 N 15TH ST BOISE 83702
Town/State/Zip:	Phone:	Email: brandymurdoch@cs.com
X [signature]	BARRY MATHIAS	602 VILLAGE LN. BOISE ID 83702
Town/State/Zip:	Phone: (208)426-8374	Email: icebum76@hotmail.com
X [signature]	Briana Werner	34 Wilderness Way Boise 83716
Town/State/Zip:	Phone:	Email:
X [signature]	Sarah Hyer	602 Village Ln. Boise, ID
Town/State/Zip: 83702	Phone: (208)426-8374	Email: sarahlwi@SnakeSun.com
X [signature]	Tich. Benedict	1816 N 13th apt 7
Town/State/Zip: Boise, ID. 83702	Phone: 342-8400	Email: Rbenedict68@Juno.com

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	ERROL D. JONES	2115 DANMORE
Town/State/Zip: BOISE ID 83712	Phone: 385-0234	Email: —
X [signature]	STEVEN SCHUSTER	2114 Madison
Town/State/Zip: Boise ID 83702	Phone: 385-0589	Email:
X [signature]	LAURA BARBEE	874 Rose St.
Town/State/Zip: Boise ID	Phone: 83703 344-4741	Email:
X [signature]	JAYSON M. JOBE	10998 CAMAS ST.
Town/State/Zip: BOISE ID 83704	Phone: 378-8846	Email: NICKROOKEY@AOL.COM
X [signature]	Carolyn Bybee	602 Ave H
Town/State/Zip: ROCK. ID 83211	Phone: 424-0193	Email: 1714 S. Jessie St
X [signature]	Chris Greenup	Cmurda420 aol.com
Town/State/Zip: Boise ID 83705	Phone: 433-8671	Email: CMURDA420@aol.com
X [signature]	BRAD OOLEY	2502 N 28th #2 Boise
Town/State/Zip: Boise Idaho 83703	Phone: 424-1038	Email: bradooley1@uttanet.com

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Sincerely,

Signature	Print Name	Complete Mailing Address
X	John French	P.O. Box 7222
Town/State/Zip	Phone	Email
Boise, Id 83707		
X Angela Schurger	Angela Schurger	boisegeun@aol.com
Boise, ID 83716	343-7248	5451 Amaryllis Pl.
X		342-8149
Boise, ID	LISA SHULTZ	1816 Leadville
X Leslie J. Stubbs	Leslie J. Stubbs	ljstubbs@micron.net
Boise, ID 83706	342-8149	
X	Gary NaEiger-Meiser	5218 W. Cobb Dr. Boise, ID 83703
	376-8529	
X	STEVEN T. SCANLIN	
Boise ID 83712		
X Lorie Estey	Lorie Estey	10855 W. Snake Ranch

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Sincerely,

Signature	Print Name	Complete Mailing Address
X Amanda Laib	Amanda Laib	2615 Pleasanton Ave
Town/State/Zip	Phone	Email
Boise ID 83702	345-3743	
X	Brad Actor	1919 W. Nez Perce
Boise	331-1717	83705
X Melanie Allardale	Melanie Allardale	PO Box 83 Montezuma, KS
X	CHARLOTTE DUNN	37 Elk Run Dr. Garden Valley
Garden Valley ID 83622	462 4020	Cjay@micron.net
X Sara Hagen	SARA HAGEN	169 Joshua Ct [redacted]
Caldwell ID 83605	(208) 455-0149	SARA-HAGEN@YAHOO.COM
X Pamela Smith	Pamela Smith	4065 N. Jennifer
Boise ID 83702	338-8937	pamellastar@hotmail.com
X Carol M Sevier	Carol M Sevier	3221 N 24th St
Boise ID 83702	345-7062	dcsevier@netzero.net

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Sincerely,

Signature	Print Name	Complete Mailing Address
	Richard G. Severs	3221 N. 24th St
Town/State/Zip	Phone	Email
Boise ID	345-7062	dcsevier@hetzero.net
	Rebecca Kuw	2730 Heron 83702
Boise		
	Jason Shaw	1320 W State St
Boise, ID 83702	342-7939	bsugreens@yahoo.com
	Jennifer Gelband	NEZE727@YAHOO.COM
Boise ID	83702 342-7939	
	Karen Hess	1611 9th
Boise	345 1944	karenhess@rocketmail.net, att. net
	Staci Hazard	
Star Idaho	83669 286-7330	
	208 286 7330	

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Sincerely,

Signature	Print Name	Complete Mailing Address
	[illegible]	2800 N. 30th Boise ID 83713
Town/State/Zip	Phone	Email
	Barzilla E. Young	650 San Jose Way
Boise ID	83712 342-1587	
	[illegible]	POB 8704 Boise 83707
Boise		
		1159 Kimberley Lane 83712
Boise ID	83712	
	[illegible]	1202 E. Bannock
[illegible]	345-0803	[illegible]
	Meg Fereday	1320 E Hays Way Boise ID 83712
		2737 Sierra
Boise ID	345-6177	

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Signature	Print Name	Complete Mailing Address
X Alicia Flinn	Alicia FLINN	1415 N. 14th St.
Town/State/Zip: Boise ID 83702	Phone: 345-0132	Email: aflinn@micron.net
X Irene E Wright	IRENE WRIGHT	5654 El Gato Ln Meridian 83642
Town/State/Zip	Phone	Email
X Gene E Bray	Gene E Bray	5654 El Gato Ln Meridian 83642
Town/State/Zip: Meridian 83642	Phone: 888-3293	Email: gebray@primenet.com
X	Ariel SIMMONS	1605 N. 10th St.
Town/State/Zip: Boise ID 83702	Phone: 344-4650	Email: sariel@isweb.net
X	TIFFANY ROOPRAI	2401 So APPLE ST. E308
Town/State/Zip: BOISE, ID 83706	Phone: 424-3353	Email: rooprai@micron.net
X	Print Name: GAMBLIEL	6731 E Glacier 83716
Town/State/Zip	Phone	Email
X Reed Burkholder	Reed Burkholder	6105 Twin Springs Dr
Town/State/Zip: Boise ID 83709	Phone: 323-8355	Email: burk@cyberhighway.net

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Sincerely,

Signature	Print Name	Complete Mailing Address
X	Amanda Bennett	11th E36
Town/State/Zip: Garden City ID 83714	Phone: 336-9029	Email: [illegible]
X	Carrie Harig	5424 Waterwheel Dr.
Town/State/Zip: Boise Id 83703	Phone: 368-0487	Email: carrieharig@hotmail.com
X	Rancia Cecil	4546 Pasadena Dr.
Town/State/Zip: Boise Id 83705	Phone: 345-1067	Email: Mystaggie18@yahoo.com
X	Betsy Smith	2112 Cleveland Blvd 403
Town/State/Zip: Caldwell, ID 83605	Phone: 459-5239	Email: CSmith@albertson.edu
X	Bob Clifford	2716 Heron
Town/State/Zip: Boise ID 83702	Phone: 343-6736	Email
X	CYNTHIA CLIFFORD	2710 HERON
Town/State/Zip: BOISE ID 83702	Phone: 342-6788 322-6230	Email: CLIFFORD1058@AOL.COM
X	Thomas Van Buskirk	
Town/State/Zip: Boise ID 83714	Phone	Email

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Signature	Print Name	Complete Mailing Address
Town/State/Zip	Phone	Email
X [illegible]	Carla McClain	3[illegible] Sioux RD.
Boise ID 83709	336-58[illegible]	
X [illegible]	LESLIE D. KENT	2560 Williamsport Lane #B
Boise Id. 83705	367-0477	
X [illegible]	Cathy Nuxoll	904 N. 27th Boise ID 83702
Sandy Achilles	658-9569	
X [illegible]	MATTHEW C SMITH	5840 Collister
Boise 83703	(208) 343-9457	
X [illegible]	James F. Smith III	5840 Collister
Boise ID 83703	(208) 343-9957	jim@steelhead.com
X [illegible]	Jeff Watson	687-3003
Logan Utah 84404		
X [illegible]	Scott Cline	PO Box 1741
Boise ID 83701	342-0226	

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Sincerely,

Signature	Print Name	Complete Mailing Address
Town/State/Zip	Phone	Email
X [illegible]	Hank Stone	11 Silverdale Court
		Lodi CA
X [illegible]	Bruce Donnelley	6381 Cantelow Dr.
Boise ID 83703	853-2328	Please do not put on mailing list
X [illegible]	Pam Martin	878 N. Princeton Way
Meridian ID	83642	
X [illegible]	John A. Ryan	3701 Apple St I-307
Boise ID 83706		
X [illegible]	Celeste Beirne-Ryan	3701 Apple Street I-307
Boise, ID 83706		
X [illegible]	MATERIOD	305 E Iowa
Boise ID 83705	No Last Name	
X [illegible]	LESLIE STESSE	914 NE 9th St #304
Boise, Id. 83702	345-4911	

Please Return completed petitions to: Snake River Alliance, PO Box 1731, Boise, ID 83701
Boise: Call 208/344-9161; Ketchum 208/726-7271; Pocatello 208/234-4782

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Sincerely,

Signature	Print Name	Complete Mailing Address
X Betty Lou Donnelly	Betty Lou Donnelly	6281 Charleston 83703
Town/State/Zip	Phone	Email
X Lyle Martin	Lyle Martin	878 W Principle Way Meridian ID 83
Meridian Id 83642	208 898 0238	lylemartin@qwest.com
X Jennie A Rylee	Jennie G. Rylee	4111 N Azalea Ln
Boise ID 83703	208-344-4739	jgcrylee@aol.com
X Sharon York	Sharon York	3031 Jordan
Boise ID 83702		
X Joseph G. Ullrich	Joseph G. Ullrich	5572 Tweet Way Boise ID
X [illegible]	345-7001	1575 N. 13th Boise, ID, 83702
Kenny Gustafson	377-5766	KT_gustafson@hotmail.com
X [illegible]	Wm Greenwell	6810 Randolph.
B I	83704	

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Sincerely,

Signature	Print Name	Complete Mailing Address
X Joseph S. Stratton	Joe Stratton	4350 Freedom Dr Meridian ID 83642
Meridian, ID 83642	327-6590	josephs@micron.com
X Chris DeJardins	Chris DeJardins	1200 E Boise Ave
Boise ID	344-4243	Chris@classiclinenpottery.com
X Leslie Fritchman	Leslie Fritchman	1801 Grant Ave. Boise 83708
X [illegible]	Nicholas G. Bayus	lesliecf@micron.net
X PO Box 1631 Boise ID 83701		
X [illegible]	Nancy Stanger	2635 N Camden
Boise ID	(208) 658-0374	
X [illegible]	David Stanger	2655 N Camden
Boise ID	(208) 658-1374	HankytonMan3d@CS.Com
X Suzanne Laverty	Suzanne Laverty	211 Hillview Dr Boise 83712
Boise Id 83712	208 336-4084	Svelaverty@uswest.net

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Sincerely,

Signature	Print Name	Complete Mailing Address
Town/State/Zip	Phone	Email
X [signature]	Rick Lebow	9535 Poole ST
La Jolla CA 92037	(858) 453-6398	elbow@adnc.com
X [signature]	Robert E Boyle	1510 N. 12th Boise ID 83702
[signature] James Bohn		1807 4th St. S Nampa ID 83651
	463-8374	
X [signature]		
X [signature]	345-3894	1004 N 15th Boise ID 83702
X [signature]	MARK FELTON	2619 OAK ST
BOISE ID 83705	208-343-2053	
X [signature]	Todd Williams	44 9th Ave [illegible]
MHAFB, ID 83648	832-4739	[illegible]@yahoo.com
X [signature]	Davonne Aysora	315 Opal B
Boise ID 05	424-8271	donnayarra@yahoo.com

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Sincerely,

Signature	Print Name	Complete Mailing Address
Town/State/Zip	Phone	Email
X [signature]	Mark A. Dewey	2717 Shoshone
Boise ID 83705	433-9352	
X [signature]	Holly Hudson	8604 W High Ridge Ln
Eagle ID 83616	286-7499	SHEHUD@MICRON.NET
X Camille Stringer	Camille Stringer	78 N. Canyon St. Nampa, ID 83651
		camille.stringer@hotmail.com
X [signature]	Chad Clemens	3619 Sunset Boise ID 83703
Boise ID 83703		
X [signature]	Josh Strasser	4523 Shirley st
Boise ID 83703	208 342-2005	[illegible]@hotmail.com
X [signature]	Suzan Paolette	141 E. Jefferson
Boise Idaho 83702	424-8401	[illegible]
X [signature]	B. Kathleen Colbert	2603 N. Prospect Pl
[illegible] Boise	853-152[illegible]	

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	EA Tucher	1918 N. 18th St.
Town/State/Zip: Boise ID 83702	Phone: 342 4458	Email: atucher@micron.net
X [signature]	LANI HOUGHTON	557 N. RIDGE Ave
Town/State/Zip: IDAHO FALLS IDAHO 83402	Phone	Email
X [signature]	STEVE SMITH	692 N. Ninth St
Town/State/Zip: BOISE ID	Phone	Email
X [signature]	JEN GRIGGS	1106 W EL PELAR
Town/State/Zip: BOISE	Phone	Email
X [signature]	SUZANNE SWEENEY	POBOX 129
Town/State/Zip: CHATTAROY WA 99003	Phone: 509-292-0866	Email
X [signature]	CHRISTY SANKEY	PO Box 12200
Town/State/Zip: IDAHO SPRINGS, CO 80452	Phone: 303/567-1150	Email
X [signature]	Barbara A. Blair	11533 Gunsmoke St
Town/State/Zip: Boise 83713	Phone	Email

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	Stephanie Hillius	526 Falls Ave W
Town/State/Zip: Twin Falls, Idaho 83301	Phone	Email: stephr@micron.net
X [signature]	KARLA WALTER (Willard)	2502 N 28th
Town/State/Zip: Boise, Id. 83703	Phone: (208)424-1038	Email
X [signature]	Virginia Husting	3215 Crescent Rim Dr. #10
Town/State/Zip: Boise ID 83706	Phone: (208) 342-8146	Email
X [signature]	CASEY SWENSON	812 W. MELROSE W
Town/State/Zip: BOISE/ID/83706	Phone	Email: SWENSOBE@YCOS.COM
X [signature]	LAURA BARBIERI	LCBarbieri@aol.com
Town/State/Zip: [illegible]	Phone: 5036745720	Email: Amanda.Kim@[illegible]
X [signature]	[illegible]	[illegible]
Town/State/Zip: [illegible]	Phone	Email
X [signature]	MARY [illegible]	[illegible]
Town/State/Zip: [illegible]	Phone: (208) [illegible]	Email: [illegible]@AOL.COM

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	Mishel VandenBusch	1912 N. 11th St Boise 02
Town/State/Zip	**Phone**	**Email**
X [signature]	Seth Stevens	1211 N 15th St Boise 83702
[signature]	Carrie Padilla	1816 N. 13th #1 83702
X [signature]	Annette Guidry	2183 Stephen #201
[signature]	[illegible]	Boise, ID 83706
X [signature]	MARK PAN	409 Pueblo Boise ID 83702
X Gordon W. Wilmoth	GORDON WILMOTH	517 N. COSTON
BOISE ID 83712	343-9530	gbw5@home.com
X Leonard Williams	381-0521	2800 No. 30th St. Boise Id 83703
Boise Id 83703		lenny@RMCI.Net
X Angela Newhouse	Angela Newhouse	3020 Hester St.
Boise, ID 83702	336-8937	anewhouse@hotmail.com

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Sincerely,

Signature	Print Name	Complete Mailing Address
X [signature]	KELT J. LAVERTY	10492 SUMMERWIND BOISE, ID 83704
Town/State/Zip	**Phone**	**Email**
	377-0911	[illegible]
X Donna Connor	Donna Connor	3225 Maze Ave
Boise Id 83706	395-1481	chinacat@[illegible].com
X Stephanie Unzicker	884-1336	
Meridian, Id, 83642	Stephanie Unzicker	
X Pat Robinson	Pat Robinson	1562 W. Storey, Meridian, Id.
Hilda Dornfest	HILDA DORNFEST	15945 ALTA VISTA DR., LA MIRADA, CA
X Danna [signature]	DANNA GEHRING	2214 N. 14th St
Boise ID 83702	388-0564	—
X Sherri Anderson	Sherri Anderson	7225 Cat Arrow Dr Boise 83709
Aaron Anderson	AARON ANDERSON	7225 Cat Arrow Dr Boise ID
X Leslie Talley	leslie talley	4052 Daphne St
Meridian, Idaho 83642		

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Sincerely			
Signature	Print Name	Complete Mailing Address	
IDAHO			
Town/State/Zip	Phone	Email	
X J Moon	JODIE R. MOON	2308 N. 26th	
Signature	Print Name	Complete Mailing Address	
BOISE ID 83702	368-0015		
Town/State/Zip	Phone	Email	
X Laura Farmer	Laura Farmer	1198 Shenandoah	
Signature	Print Name	Complete Mailing Address	
Boise, ID 83712	385-0831		
Town/State/Zip	Phone	Email	
X Lori Gardiner	LORI Gardiner	1718 N. 9th #3	
Signature	Print Name	Complete Mailing Address	
Boise ID 83702	331-3159	pugdog@yahoo.com	
Town/State/Zip	Phone	Email	
X	JONATHAN GARDINER	1718 N. 9TH #3.	
Signature	Print Name	Complete Mailing Address	
BOISE ID 83702	331-3159		
Town/State/Zip	Phone	Email	
X Elon Whitlock	Elon Whitlock		
Signature	Print Name	Complete Mailing Address	
Boise ID 83702	345-4449	1516 N. 26th	
Town/State/Zip	Phone	Email	
X			
Signature	Print Name	Complete Mailing Address	
Boise ID 83702	387-5612		
Town/State/Zip	Phone	Email	

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Sincerely			
Signature	Print Name	Complete Mailing Address	
X Michael E Donnelly	MICHAEL E. DONNELLY	4382 W. Samara Ct.	
Boise, ID 83703	344-4889	MEDZEUS@aol.com	
Town/State/Zip	Phone	Email	
X	Leonard Hill	220 Horizon Dr.	
Signature	Print Name	Complete Mailing Address	
Boise ID 83707	342-9168		
Town/State/Zip	Phone	Email	
X	KAREN A McFARLANE	4382 W SAMARA CT	
Signature	Print Name	Complete Mailing Address	
Boise, ID 83703	(208) 343-3331		
Town/State/Zip	Phone	Email	
X James L Hill	Paula Hill	220 HORIZON DR	
Signature	Print Name	Complete Mailing Address	
BOISE ID 83702	(208) 342-4164		
Town/State/Zip	Phone	Email	
X Tamara Smith	Tamara Smith	10443 Irving Ct	
Signature	Print Name	Complete Mailing Address	
Boise Id 83704		tate-89@excite.com	
Town/State/Zip	Phone	Email	
X Anna Kreiger	Anna Kreiger	2910 Edson St.	
Signature	Print Name	Complete Mailing Address	
Boise ID 83705	429-8578		
Town/State/Zip	Phone	Email	
X	Brian Beck	3415 Warlances	
Signature	Print Name	Complete Mailing Address	
Boise, Id 83705	367-1049	TroutBuckthat@hotmail.com	
Town/State/Zip	Phone	Email	

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Sincerely,

Signature / Town/State/Zip	Print Name / Phone	Complete Mailing Address / Email
X Susan M. Brown / 10130 Hackamore, Boise, Id 83709	Susan M. Brown	
X [signature] / Boise, ID 83702	Rebecca Davis / 344-0848	426 Sherman St.
X Karen R. Oster / 3089 N. 5 mi. Rd. #204- Boise, Id. 83713		
X Alane Dominick / Boise, Idaho 83702	342-5374	1515 N. 21st E
X [signature] / BOISE ID 83706	FRED KLENE III / 208-368-0430	120 E MALLARD DR
X Heidi A. Andrade / 713 Stilson Rd. # 106 Boise 03	Heidi A. Andrade	heidi.andrade @ usa.net / heidi.andrade@usa.net
X Jesse Andrade / Boise ID 83703	Jesse Andrade / 208 433 9278	705 Stilson rd #104 / fidele hifidelity.org / www.hfidelity.org

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Sincerely,

Signature / Town/State/Zip	Print Name / Phone	Complete Mailing Address / Email
X [signature]	Timothy R. Day	560 Thomas St, BS ID 83706
X Brooklynn Weir / Boise, Id 83706	Brooklynn Weir / (208) 368-0430	120 E. Mallard Dr.
X [signature] / Boise, ID 83702	208 385 1437 / Michael [illegible]	2026 N. 10th St. Boise 83702
X Karen King / Boise, ID 83704	Karen King / 323-6096	5075 Sunderland Dr
X Dan Rasmussen / Boise, Id 83702	Dan Rasmussen 385-9775 / 345-9775	2403 Fairview Ave / [illegible]
X [signature]	Mark [illegible]	1808 N. 7th St, Boise ID 83702
Joyce Walton	Joyce Walton	[illegible] Boise 83702
X [signature] / Caldwell ID 83605	Jeff Cardona / 561-6131	23106 [illegible]

Please Return completed petitions to: Snake River Alliance, PO Box 1731, Boise, ID 83701
Boise: Call 208/344-9161; Ketchum 208/726-7271; Pocatello 208/234-4782

PETITION in opposition to
Plutonium production
PROPOSED AT THE IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

The use of building '666' to produce plutonium at the Department of Energy's Idaho National Engineering and Environmental Laboratory poses unacceptable hazards to human health and the environment. Plutonium is one of the most toxic substances known to man, and the current plan to produce more is unjustifiable.

Restarting this highly contaminated facility at INEEL would produce a large quantity of dangerous and difficult to contain liquid radioactive waste. Past leakage of this type of waste currently threatens the Snake River Aquifer beneath the site. The Snake River Aquifer is Southern Idaho's number one source of water and must be protected. INEEL already has a tremendous nuclear waste problem, and production of more would make an already difficult cleanup job more difficult.

We, the undersigned, demand that you abandon the plutonium production mission at INEEL as outlined in your recent environmental assessment on expanding the nuclear infrastructure in the United States. Here in Idaho we are proud of our world famous potatoes and would prefer to remain known for an agricultural rather than a plutonium economy. Produce potatoes not plutonium.

Sincerely,

Signature	Print Name	Complete Mailing Address
X	Jan Raper	5815 San Anita
Town/State/Zip	Phone	Email
Boise Id 83704	323-8201	jraper16@micron.net
X	Chris Hitesman	10827 W Ustick Rd Apt 202
Boise, Id. 83713	208-321-1451	hitesman@hotmail.com
X	Brad Schmitz	1819 W. Boise Ave. Apt. G
Boise, 06	933-1174	Bradschmitz@hotmail.com
X	Kay Russell	5001 E Ustick #3
Caldwell, I.D.	454-0752	
X	Steve Guinn	P.O. Box 3471 Boise 83704
	327 8903	
X	DEBBIE PINELAND	1727 C. HUGAO EAGLE, ID 83616
EAGLE, ID 83616	939-1052	dpineland@city of boise.org
X	Dylan Webster	P.O. Box 364 Payette, ID 83661

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Boise: Call 208/344-9161; Ketchum 208/726-7271; Pocatello 208/234-4782

Commentor No. 1697: Gary E. Richardson (Cont'd)
Snake River Alliance

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Plutonium production
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Sincerely,

Signature	Print Name	Complete Mailing Address
X	Karen Thomason	12294 W. Audi Boise
Town/State/Zip	Phone	Email
Boise ID 83713	378-5896	
X	KIM GASHMAN	2021 Colorado
Boise ID	384-9790	
X	Chad Holton	2021 Colorado
Boise ID	384-9790	
X	Jeffrey Stallings	975 Strawberry Ln
Boise, ID 83712	363-0360	
X	Steve Moser	3128 Bryson
Boise ID	n/a	n/a
X	GARY E. RICHARDSON	rencon@micron.net
BOISE ID 83712	336 2128	746 SANTA ANGELA CT.
X		

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Sincerely,

X Marie D. Hoff	Marie D. Hoff	1116 N. 15 St.	
Signature	Print Name	Complete Mailing Address	
Boise, ID 83702	208-368-9864	HDaKotamone@aol.com	
Town/State/Zip	Phone	Email	
X Barbara Wuhl			
Signature	Print Name	Complete Mailing Address	
Box 22003	SB Ca	93102	
Town/State/Zip	Phone	Email	
X Jill Stephens	Jill Stephens	3006 E. Fern Brook Dr, Eagle, ID 83616	
Signature	Print Name	Complete Mailing Address	
Town/State/Zip	Phone	Email	
X			
Signature	Print Name	Complete Mailing Address	
Town/State/Zip	Phone	Email	
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Signature	Print Name	Complete Mailing Address	
Town/State/Zip	Phone	Email	
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Signature	Print Name	Complete Mailing Address	
Town/State/Zip	Phone	Email	
X			
Signature	Print Name	Complete Mailing Address	
Town/State/Zip	Phone	Email	

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Boise: Call 208/344-9161; Ketchum 208/726-7271; Pocatello 208/234-4782

Commentor No. 1698: Richard C. Geary

From: ReCarDeaux@aol.com%internet
[SMTP:RECARDEAUX@AOL.COM]
Sent: Sunday, September 17, 2000 4:54:59 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: D.O.E. Comments on expansion of plutonium 238
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: Richard C. Geary
520 NW 44th Street
Oklahoma City, OK 73118
ReCarDeaux@aol.com

Dear Ms Brown:

After reading considerably on the subject, I have come to some conclusions about plutonium and its problems.

Babysitting plutonium 238 for 240,000 years until it becomes non_radioactive is NOT INEXPENSIVE OR SAFE. Cleaning up the existing Hanford site ($300 Billion) is NOT INEXPENSIVE. Waiting for radioactive waste to leak into the groundwater or into the food_chain is NOT SAFE. Dispersing plutonium into the upper atmosphere to be inhaled by the inhabitants of Earth, producing cancer, below (at a 10% rocket_failure rate) is NOT ADVISABLE. **1698-1**

Therefore, I respectfully urge D.O.E. NOT TO WORSEN THE PROBLEM by producing more, unnecessary (when Europe has developed solar alternatives) plutonium for launches which NASA thinks it needs for its purposes.

Richard C. Geary

Response to Commentor No. 1698

1698-1: 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, although issues such as NASA research priorities are beyond the scope of this PEIS. Through a Memorandum of Understanding with NASA, DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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.

Under the National Space Policy issued by the Office of Science and Technology Policy in September 1996, and consistent with DOE's charter under the Atomic Energy Act, DOE is responsible for maintaining the capability to provide the plutonium-238 needed to support these missions. There are approximately only 9 kilograms (19.8 pounds) of plutonium-238 in the U.S. inventory available to support future NASA space missions. Based on NASA guidance to DOE on the potential use of radioisotope power systems for upcoming space missions, it is anticipated that the existing plutonium-238 inventory will be exhausted by approximately 2005.

DOE also notes the commentor's concern 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.

Commentor No. 1699: Thomas A. Coleman Framatome Cogema Fuels

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FRAMATOME COGEMA FUELS

September 18, 2000
GR00-130.doc

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

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

Dear Ms. Brown:

This memorandum supplements our previous comments of September 5, 2000, on the subject document. We appreciate the consideration being given to commercial light water reactors (CLWRs) as an option for producing Pu-238. We also strongly suggest that CLWRs be more thoroughly evaluated for their suitability for producing medical isotopes. **1699-1**

Further, as we mentioned in earlier telephone conversations, we were surprised to see one figure from the proprietary material we shared with you last year incorporated in the draft PEIS. While we are not asking that this figure be deleted from the final EIS, we would like to maintain the proprietary status of the remaining material and hope that our proprietary material will be treated appropriately in the future.

Very truly yours,

Thomas A. Coleman
Vice President
Government Relations

TAC:jfd

FRAMATOME TECHNOLOGIES

Framatome Cogema Fuels
3315 Old Forest Road, P.O. Box 10935, Lynchburg, VA 24506-0935
Telephone: 804-832-3000 Fax: 804-832-3658

Response to Commentor No. 1699

1699-1: DOE notes the commentor's suggestion to consider CLWRs for the production of plutonium-238 and medical isotopes. CLWRs were evaluated to the extent necessary for the purpose of supporting the PEIS in a similar manner as other alternatives such as the new research reactor new accelerator, ATR, HFIR, and FFTF. However, modification of CLWRs to enable online insertion and retrieval of targets for the medical and industrial isotope production missions was evaluated and dismissed as a reasonable alternative because the required facility modifications would be significant, would include penetrations into the reactor vessel, and, possibly, the containment vessel, and would require additional facility modifications to enable loading of targets into a shielded cask for transport to a processing facility, and would require an extended refueling outage for performing the facility modifications, which would result in a loss of power generation revenue to the CLWR owner.

Commentor No. 1700: Marlene G. Oliver New Medical Technology

Marlene G. Oliver, Consultant
New Medical Technology
94006 Northstar Lane PR NE
West Richland WA 99353
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DOE N1 PEIS Statement
September 18, 2000

As a consultant, I introduce physicians and their support staff to emerging medical technologies. I was trained as a research biologist. The information that follows comes from the National Institutes of Health, the National Cancer Institute, the Centers for Disease Control in Atlanta, Medicare, the Health Care Finance Administration, studies published in medical journals, studies presented at medical conferences, physicians, medical companies and the American Cancef Society. References are available.

Over 1500 cancer patients die daily in this country. This is equivalent to three ful"ly loaded Boeing 747s crashing to the earth and killing everyone on board, every day. This is a national public health issue, a national outrage, and an urgent national health care emergency. Nearly one in two males and one in three fernales will develop cancer. Cancer is the leading cause of death for Americans under the age of 65. It will soon overtake heart disease as the number one killer in America. Every hour in this country, a child is diagnosed with cancer. Cancer is an equal opportunity disease. Radiation kills canGer cells. Radiation administered internally, in as little as a 30 second injection, may be directed just to cancer cells as "smart bullets". With alpha emitters, radiation penetrates no more than three cells thick, sparing healthy surrounding tissue. Boredom is the most common study side effect of these isotope treatments. Early study patients are given less than six months to live and have failed at least two other treatments such as often debilitating chemotherapy. Many patients refuse therapy as they are more afraid of the treatment than the disease. Now, five and more years later,

Response to Commentor No. 1700

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

many of these patients treated with isotopes who faced death remain cancer_free. Laura from Alabama said "No other previous treatment had done anything to reduce my tumors. What I love about this treatment is that it works, it takes the pain away, and there's no side effects." This is a quality of life issue, a humanit6rian issue. I ask that the DOE please. consider these facts in its decision making process. DOE requests are given in bold face type.

In the NI PEIS the I ask the DOE to include the following information. **1700-1**

Isotope quantity, quality and availability, particularly for research Isotopes and isotopes with high specific activity. Over 90% of Isotopes are imported. In Canada, where most isotopes used in America are produced, nuclear workers threatened to go on strike the last two times their contract came up for renewal. They have a four year contract. The situation was so dire that the last renewal, the University of Virginia Medical Center, as an example, sent a lefter to its staff suspending all but emergency tests requiring isotopes as of Monday morning. Canadian nuclear workers signed at the eleventh hour. This foreign isotope dependency, no matter how friendly the source, is not acceptable to health care providers or for patients in this country. Over 14 million isotope_dependent diagnostic tests are perform ' ed yearly, 36,000 procedures daily in this country. One in three hospital patients are diagnosed with tests that require medical isotopes.

Many of the isotopes required to best treat diff use cancers are alpha emitters. Half_lives of short_lived, powerful alpha_emitting isotopes, measured in minutes, REQUIRE a domestic supply. Isotope production sources should be Identified in tho NI PEIS considering current DOE nuclear facilities, Including reactors, cyclotrons, and accelerators, and address which Isotopes, both for diagnosis AND treatment, are best produced in which facilities and will come from which specifically identified DOE nuclear facility sources. A list of the isotopes that are best or only produced In cyclotrons, reactors, and/or accelerators is attached, based on **1700-1**

Response to Commentor No. 1700

1700-1: DOE notes the commentor's support for restarting FFTF to enhance availability of medical isotopes. 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 the purposes of analyses in the NI PEIS, a representative set of isotopes was selected on the basis of the recommendations of the Expert Panel, medical market forecasts, reviews of medical literature, and more than 100 types of ongoing clinical trials that use radioisotopes for the treatment of cancer and other diseases. These isotopes, which are comprised of both reactor- and accelerator- produced isotopes, are listed in Section 1.2, Volume 1 of the NI PEIS along with a brief description of their medical and/or industrial applications. As identified in Appendix C, Volume 2 of the NI PEIS, FFTF would be capable of producing the majority of these representative isotopes. These include research isotopes with currently limited availability, such as copper-67, as well as commercial isotopes whose current application is inhibited by lack of availability or high cost, such as palladium-103. However, the absence of any specific isotope from these tables should not be interpreted to mean that it could not be considered for production under the proposed action. DOE expects that the actual isotopes and specific amounts produced as a result of the proposed action would vary from year to year in response to the focus of clinical research and the specific market needs occurring at that time.

calculations performed by experts. This information should be included in the NI PEIS and the DOE should consult this list prior to deciding its course of action in its nucleair Infrastructure mapping plan. Current committed facility missions should be accounted for, as medical isotope production cannot occur if other missions are given priority, as at present. Cancer does not wait. Again, the DOE should consider and identify which facilities realistically might most efficiently produce which of the over 40 different isotopes that have been identified as having medical application to treat over 200 identified cancers and other diseases, given that many treatment isotopes are best produced in reactors that require a high neutron flux, such as the FFTF. Please also recall that the FFTF produced approximately 60 different research isotopes during its operation. Consider the volumes of treatment isotopes that will be required, and that presently the private sector is not equipped to meet this demand. It is estimated that over one million cancer patients diagnosed per year, over three million currently living with cancer, might be Isotope treatment candidates. Please note that Frost and Sullivan, in their 2000 report, revised the estimated medical isotope growth rate upward, to between 12 and 25 percent per year. Last year, this growth rate was 19 percent. Recognize that FFTF is well suited to produce small quantities of research and large quantities of treatment isotopes. At the Seattle NI PEIS meeting, I'spoke with a woman whose father was treated with high specific activity 1_131 produced at FFTF for his non_Hodgkins lymphoma, generally a fatal disease. Without this treatment, he was given less than three months to live. His good health was restored after one "smart bullet" injection, and he remains cancer_free eleven years later. She stated that his restored health and life is priceless to his family. She also stated that his physician was dismayed when he could no longer obtain this purified isotope when FFTF was put on standby. Louisiana State Medical University, among others, has asked the DOE to please supply this isotope for their studies. Their request is attached. The DOE should be aware that 1_131 currently obtained from Canada is only about seven percent pure, and that a domestic supply of purified, high specific activity 1_131 will be substituted for the Canadian version should the FFTF be restarted. Physicians are

1700-1 (Cont'd)

1700-1

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

using this inferior isotope because it is readily available. It is probably not the isotope of choice to treat other than thyroid cancer. Again, cancer is a collection of over 200 different diseases. Just as different antibiotics are required to treat different infections, various isotopes are required to treat a variety of cancers. The DOE should consider requests from physicians who have been unable to obtain the isotopes they need and have asked for to treat even small numbers of study patients. Approximately seventy_five percent of physician/researchers polled who aftended the DOE _ sponsored Medical Isotope conference in Washington, D.C. in March, 1999, stated that their research isotope needs are not being met. The DOE should consider its policy commitment to supply research isotopes to these and other physicians conducting clinical trials, and logistically explain how these orders will be filled, and in a timely fashion. Dr. Robert Schenter testified August 31, 2000 in Richland that the IFFTF successfully produced research isotopes during its operation, in contrast to the DOE statement that the FFTIF is not a research isotope production candidate. The DOE should reverse this statement. This expert nuclear physicist told me that FFTF produced sixty research isotopes " efficiently and cost_effectively." Isotopes were sent to, among others, Children's Hospital in Boston, who received them at no charge after production piggybacked onto another program. This successful research Isotope production program should be outlined In the NI PEIS and considered and continued in a restarted FFTIF. Dr. Schenter was the Hanford Isotopes Program manager for IFFTF from 1985 _ 1996. The DOE should reexamine FFTF for research isotope production and consult with those who worked to produce these research isotopes and obtain relevant facts from experts who were involved in this effort. "Junk science" should have no part in the NI PEIS nor in any decision making related to this document. Please seek out the truth from recognized experts in their fields for topics listed throughout the N1 PEIS. Please especially consider physician requests such as "Our organization represents over 30,000 practicing radiologists... it is difficult to conduct clinical studies with even very small numbers of patients. Research is being hampered or removed from consideration by a lack of these isotopes. Medical isotopes are often

1700-1

Response to Commentor No. 1700

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

the only effective way to properly diagnose and treat serious disease. It is_ crucial that we ... have access to a wide variety of isotopes, including those with high specific activity, appropriate to diagnose, prevent and treat heart disease, cancer, arthritis, and, more recently, infectious disease." Signed, Jerry P. Petasnick, MD, Chairman of the Board, Radiological Society of North America. As examples, please see attached letters requesting research isotopes from the Radiological Society of North America and the American Society of Nuclear Cardiology, as well as the LSMU request. Patients do drive markets. Patients want their disease gone, as quickly and easily as possible. The DOE should recognize this fact and give physicians the tools they will need to satisfy patient demand. The DOE should also recognize that the 1997 _ Frost & Sullivan report was too conservative in its original report. It stated _that the expected growth in medical isotopes should be between seven and fourteen percent per year. The DOE should recognize that isotope demand should approach exponential growth initially, as study isotope therapies begin clearing the FDA and these treatments become available to the general patient population. Last year, again, the isotope growth rate was actually nineteen percent, yet not one isotope treatment was FDA approved. At least one and possibly more isotope treatments are projected to be approved within the next year. As disease is characterized more accurately, noninvasive isotope diagnostic tests that avoid more costly treatment procedures will continue_to increase in number. The DOE requested LESS Isotope production funding for FY 2001 than In FY 2000. This does not make sense. There may be a typographical error. The request should have been $170 million instead of $17 million for this program? Please send the corrected sum to Congress post haste. Further examples of shortages follow. Early stage prostate cancer patients may be treated with either surgery or tiny radioactive seed implants. Long term, twelve year survival results are the same for both procedures. With a new seed implant design on the horizon, results should become better with seeds than with surgery. Prostate surgery requires a painful six week recovery and a better than fifty percent chance that the patient will become impotent, incontinent, or both. Many men are thus forced into

1700-1

1700-2

Response to Commentor No. 1700

1700-2: The amount requested by DOE for isotope support in FY 2001 was approximately 17 million dollars. The reduction of approximately 3 million dollars from the previous fiscal year is a result of the near completion the new Beam Spur at the Los Alamos Isotope Production Facility, which required DOE to request less for capital cost associated with the construction of the Beam Spur.

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

surgery and many must wear a diaper for the rest of their lives as a consequence of this backorder situation. This is but one example of many. Quality of life issues should be addressed In the NJ PEIS. Seed implants are done as an outpatient procedure that takes about an hour at half the cost of surgery, typically with a one or two day recovery, and less than a ten percent incidence of complications. Patients in San Francisco and Los Angeles have faced up to a one year backorder for seed implants due to a shortage of isotopes 1_125 and Pd_103. Apparently Johnson and Johnson, the largest medical company in the country, is Using 16 new cyclotrons that cost millions of dollars in an effort to alleviate Pd_103 backorders for their seeds. Cyclotrons (and accelerators) are inefficient producers of Pd_103 and other treatment isotopes. J & J still faces a backorder situation. J & J has recently contracted with the DOE's HFIR reactor to obtain additional quantities of Pd_103 in a manner identical to that proposed for the use of FFTF, yet HIFR is scheduled to close for four months beginning in October, With a fraction of a target, the FFTF could produce enough Pd_103 to fill over 100% of projected treatment needs in 2003 in a market that is expected to grow 20% per year for prostate seeds
alone. When I spoke with a high_ranking J & J employee about FFTFS capability for Pd_103 production, he was speechless. Attached please find a letter from Johnson and Johnson expressing an interest in FFTF to produce this and other isotopes. This J and J employee _has requested more information. If you contact me, I will give you his name, address, telephone number and email address. Cancer does not wait. After a ten year breast cancer study with palladium implants, Carl Mansfield, MD, Thomas Jefferson University Hospital, Philadelphia, said, "these implants mean that a patient can keep a breast and still have the same chances of survival..." Mastectomy is where the surgeons remove the whole breast in an effort to take the cancer with it. The National Association of Cancer Patients and Citizens for Medical Isotopes presented information on breast cancer diagnosis and treatment with medical isotopes September 15 and 16, 2000 at the Susan G. Komen Breast Cancer Foundation's "Race for the Cure" Health Expo in Portland with its projected 50,000 runners, minimum. We

1700-3

Response to Commentor No. 1700

1700-3: 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.

Quality of life issues are addressed in the PEIS as they relate to persons potentially affected by the environmental impacts of implementation of the alternatives. Quality of life as regards medical patients are benefits resulting from the availability of medical isotopes from all sources and is not within the scope of this PEIS. The scope of the PEIS is limited to the evaluation of alternatives to accomplish three missions, medical and industrial isotope production, plutonium-238 production for NASA missions, and nuclear research and development for civilian purposes.

were told that this event should have national media coverage. This raised awareness among cancer and arthritis patients of improved isotope diagnoses and treatment regimens to an organization that provides hundreds of millions of dollars annually for breast cancer research, both through fundraising and via its influence with Congress. We hope that the DOE will be contacted. Signed petitions are being entered in the N1 PEIS. Cancer patients are also suffering from a lack of other isotopes. A promising study at the University of California at Davis with advanced breast cancer patients responding to Cu_67 isotope treatment was suspended when the DOE shut down the reactor producing this isotope. Cu_67 has a natural affinity for breast tissue as well as prostate tissue. A cyclotron supplied by the DOE for this facility is unable to produce enough Cu_67 for even small numbers of study patients. At the Memorial Sloan_Keftering Cancer Center in New York, it took three years to obtain enough alphaemitters to treat 18 study patients with acute myeloid leukemia. Last year John Stanford, the much_loved Seattle superintendent of schools who was stricken with this disease, was made aware of this study. He was ready for the treatment. The study results were published this summer. Had there been an adequate supply of alpha emitters to treat John Stanford, he would have had a 70% chance of being at his desk today, helping the children of Seattle. Study results showed 13 of the 18 patients responded to this therapy. Each had been given less than six months to live after other treatments failed. The DOE has graciously agreed to double the amount of alpha emitters to this facility for the next study phase by the year 2002. This is unacceptable. Please consider that this year, it is estimated that 9,700 patients will be diagnosed with this disease, and 7,100 will die. One of our state legislators included in her August 31, 2000 Richland testimony that a boy died of this disease one week earlier, one month before his fourteenth birthday. Cancer is largely an equal opportunity disease. Most of these deaths could have been prevented if patients had been treated with isotopes. The media has begun to present isotope treatment information to the public. The DOE should be prepared to meet a growing isotope demand. The NI PEIS should serve as the basis for a nuclear infrastructure to accommodate patient needs.

1700-3

Commentor No. 1700: Marlene G. Oliver (Cont'd) New Medical Technology

The DOE should consider in the NI PEIS a public_private partnership In compliance with Its own stated policy to spin off government enterprise to the commercial sector. The private sector should be more suited to coordinate production of medical isotopes such that they may be delivered in a timely fashion for processing and thence to medical facilities where patients await diagnosis and treatment. Please also realize that patients prefer to be treated near their homes. The DOE should consider in its NI PEIS placing mini high neutron flux reactors and accelerators with a primary medical Isotope production mission at sites around the country so that all Americans have access to these diagnostic capabilities and life_giving treatments with short_lived and other medical isotopes. Thus, alternatives 1, 3 and 4 should be In6luded in the nation's nuclear infrastructure plan. Again, the isotope production situation in this country is unacceptable to many in the medical community, must be addressed in the NI PEIS, and rectified post haste. My number one rule to manufacturers I work with who produce life support products is "You can't tell a patient you're backordered." Coupled with this is a requirement for redundancy of supply. It is recommended that the DOE not only restart FFTF, but add the alternatives listed In the N1 PEIS to construct additional nuclear facilities to produce 'Medical isotopes to meet the needs of Americans in their fight against serious disease.

1700-4

1700-5

The NACP asks the DOE to consider the Balanced Budget Act of 1997 and to include within the NI PEIS a cost_benefit analysis of radioisotope therapy, alone or in combination with other, older treatments such as surgery, chemotherapy and external beam radiation. I strongly disagree with the DOE statement at the PEIS hearing that these numbers are not readily available. DRGs and treatment expenses are easily obtainable from the Health Care Finance Administration and others. Figures for isotope_based diagnostic tests and therapeutic treatments should be addressed and are available through the HCFA and hospital billing records, among others. Please include in the NI PEIS cost estimates of how medical isotopes used to dia*gnose disease avoid unnecessary

1700-6

Response to Commentor No. 1700

1700-4: DOE currently has business relationships with private companies related to the production of radioisotopes. DOE will continue to pursue business arrangements with private companies in order to offset the cost of isotope production.

1700-5: DOE notes the commentor's support for the use of multiple reactors and accelerators around the country to provide patients with access to short lived medical isotopes. However, the half life of the isotopes to be produced within the context of the NI PEIS are sufficiently long to provide ample time for them to be processed and shipped to their end point without losing their effectiveness. Thus, DOE does not feel that it is necessary or cost effective to build multiple reactors and accelerators to provide patients with an adequate supply of medical isotopes.

1700-6: 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.

Commentor No. 1700: Marlene G. Oliver (Cont'd) New Medical Technology

invasive procedures, as the mother of a teenager testified in Richland. After his eye was removed due to trauma, the noninvasive isotope diagnosis showed that her son did not require further surgery. Many exploratory surgeries and other procedures are avoided after a diagnosis based on isotope testing. A new technique used in the emergency room separates patients complaining of chest pain into two categories: those who really are having a heart attack and shOUld be referred for further treatment, and those who are just having severe
indigestion and could be. sent home instead of being admitted for further costly tests. Another isotope test distinguishes between patients who might benefit from open heart surgery and those who would not, saving the lafter from unnecessary trauma. This cost study should be based on the top ton cancers, rheumatoid arthritis, and heart disease, comparing older treatments with medical isotope treatment cost savings. Statistics presented for diagnoses, the few FDA approved cancer radioisotope treatments, and for clinical study, results published in the medical literature should naturally be included. Again, these figures are readily available. Please keep in mind that, in 1993, it cost an average of $15,000 to care for each dying cancer patient, and that over 550,000 cancer deaths are expected in 2000. Medical isotope treatment could cut that figure in half. The goal of cancer treatments is to rid the patient of cancer cells during the first treatment regimen. For example, sixty percent of cancer patients undergo surgery, at a cost of from $10,000 to $200,000 for more involved brain and lung cancer procedures,. Surgeons only remove the cancer that they can see. Sixty percent of these patients Ondergo at least one more surgery when small pockets of cancer cells that are too small to see are left behind to proliferate. Radioimmunoguided surgery is successfully treating study patients. Isotopes are placed where the tumor was removed. Given in small amounts, these isotopes guide the surgeon to remove pockets of cancer cells that would otherwise be missed. These isotopes may also be given as treatment smart bulletSTM to "zap" remaining cancer cells. Similarly, seed implants are also being used to irradiate the area surrounding the removed tumor, as in costly brain cancer, to eradicate missed, remaining cancer cells.

1700-6

Response to Commentor No. 1700

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

Seed implants have been approved for use in the general liver cancer population in Australia, New Zealand, Hong Kong, and, more recently, Canada. Many cancer patients, especially prostate and breast, develop liver cancer when their cancer migrates, or metastasizes, away from its original site. Liver cancer is basically a fatal disease. Up to forty percent of liver cancer patients survive after isotope seed implant therapy. An absolute minimum two billion dollars might be saved an I nually after these intraoperative isotope treatments are approved in this country and become a part of the surgical armamentarium. In one recent study, it cost $1500 per day, or about $60,000 per patient in direct medical costs to treat leukemia, patients with the first round of chemotherapy for the first six weeks in a series of treatments. These patients normally continue with external beam radiation, f6llowed by a second regimen of another six to eight week chemotherapy session, at a cost of well over $100,000 per patient. Many. patients endure this regimen multiple times. Seventy percent of adult leukemia patients die in spite of this effort. Over 100,000 Americans are diagnosed each year with blood cancers. Over 70% of isotope study patients with advanced blood cancer see their disease disappear and remain in remission five years later., and over 90% of such cancers shrink significantly, with a single "smart bullets" intravenous administration or needle injection at a cost of less than $10,000 per patient, typically without the debilitating side effects of chemotherapy. Melody, a non_Hodgkins lymphoma patient, described her 30 second isotope injection as "wham, bam, thank you maam". Three chemotherapy treatments failed Melody. Over 50,000 cancer patients will contract NHL in 2000. Jacqueline Kennedy Onassis and, more recently, King Hussein, were NHL patients. Melody's N smart bullet"' injection at NeoRx company in Seattle put her cancer into remission. Please note that this company has asked the DOE to supply the isotope Holmium_166 for study patients with multiple myeloma, another blood cancer. NeoRx waits for this isotope as the incidence of this cancer rises in this country. Recognize In the NI PEIS such realistic estimates as over 10 billion dollars per year in health care cost savings when isotope treatment becomes mainstream for blood cancer patients alone. Study data for the most

1700-6

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common type of non_Hodgkins lymphorna, is complete and before the FDA for final approval to sell in this country. Additionally, it costs thousands of dollars per gram of protein or peptide, the biological component of "smart bullets". Should purified high specific activity 1_131 become available, the'Cost to treat patients with "smart bullets" with this isotope, instead of the impure, less desirable Canadian 1_131, will shrink substantially, further reducing treatment costs. Consider that the six year death rate from ovarian cancer,' the disease that claimed comedienne Gilda Radner, and, more recently, Academy_Award winning actress Madeline Kahn, was 86% in a recent study. Only 10% of ovarian cancer study patients died of this disease within six years after 'smart builet'T" treatment. The last phase of this study prior to seeking FDA approval is underway.

Patients restored to good health after their isotope treatment return to the workforce, as did Melody. Include in the NI PEIS cost_benefit analysis a projected realistic estimate of increased tax revenues to the U.S. Treasury.

1700-6

Heart disease is the number one killer in this country. Medical isotopes in late _ stage studies in this country are working to keep coronary arteries open, avoiding costly repeat angioplasty and open heart surgery for potentially 50,000 patients per year. Some patients undergo six angioplasties, after their arteries repeatedly close. Medicare paid $10,666 for each stented procedure in 1999. Studies show that half of these repeats might be aVoided by adding an isotope during the initial procedure that interferes with the primary complication, excess scar tissue formation. This would also help avoid costly open heart surgery for these patients.

Also be aware that isotope treatment is routine in Western Europe for intractable rheumatoid arthritis, a disease that currently affects about eight million Americans. This number expected to grow to a minimum of 12 million patients over the next 20 years. This therapy involves a thirty second isotope injection per joint treated, commonly in the knee and small joints of the hand. The isotope works to clear inflammatory cells clogging the joint. The European cost: about $500 per injected

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

knee. This treatment replaces a surgery referral for a majority of these patients. In this country, these patients are referred for total knee replacement. Their diseased knee joint is removed and an artificial metal joint inserted in its place. Medicare pays about $15,000 per knee joint replacement surgery. Hand surgery is even more costly. The European isotope of choice for the hand is Er_169. When Oak Ridge was contacted last summer, I was told Er_169 is not available. FFTF is an ideal production candidate for this isotope. Arthritis is the number one reason that Medicare patients visit their physicians. Again, projected cost savings with isotope treatment is in the billions of dollars annually.

The first studies are being conducted using "'smart bullets" to target infectious disease such as the AIDS virus.. Include in the N1 PEIS an estimated cost savings of approximately $40,000 per AIDS patient per year for medications alone should this study prove successful. We are also but one antibiotic away from other infectious disease epidemics as pathogens mutate and become resistant to antibiotics. One example is tuberculosis. Isotope treatments may keep these diseases from becoming widespread.

One of the best ways to increase the bottom line in business is to reduce costs. Cost savings for the above treatments should be estimated in the N1 PUS. Venture capitalists are generally happy to receive a five to one return on investment. They are extremely happy to see a ten to one ROL Recognize that restarting the IFFTF should produce at least a 25 to I R01 In cost savings, over 100 to one for some diseases treated with medical isotopes, even without including revenues from isotope sales. Recognize that the projected cost savings to Medicare and Medicaid alone, as these therapies become more mainstream, should more than pay for this isotope production program, including construction of accelerators and mini high flux reactors across the country. Recognize that the cost savings from restarting FFTF might also pay for over one hundred of Mr._ Magwood's existing programs, with money left over to supply prescription drugs at no charge to the elderly and health insurance to the over 40 million Americans who have no coverage. Recognize that

1700-6

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Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

It Is the lack of health insurance coverage for these individuals that pose the greatest health threat to this country. This potential human, economic, and environmental impact to this country is severe. In addition, as a taxpayers, we have already paid for the FFTF As stakeholders, Americans would want to see and expect a return on this investment. Restarting FFTF is the single most cost effective alternative in the N11 PEIS given the facts as listed above, and should be so recognized.

1700-6 (Cont'd)

3., Waste minimization. The DOE is always questioned about the waste generated from the operation of its nuclear facilities. The NI PEIS question is "How much waste is generated?" Another question should be "How much waste could be eliminated?" The DOE should consider waste inimilzation from the medical community's point of view, from a national level and from the health perspective of the increasing use of medical isotopes. Compared with the numbers shown in the NI PEIS, the volume of infectious and toxic waste that is generated with current, less effective cancer treatment methods is enormous. These numbers would be sharply reduced from the more efficient use of medical isotopes for diagnosis and therapy. Cancer patients produce a lot of waste. Surgery waste is infectious; chemotherapy waste is both poisonous and infectious. Witness Ms. Piippo's Richland testimony that the vomitus after her chemotherapy treatments ate away the insides of the RubbermaidTM_type container provided to collect her discharge. Recognize that these wastes are toxic, infectious hazardous wastes and require special handling at high cost. A single cancer surgery produces a minimum of two to over twenty large 33 gallon garbage bags of hazardous waste. A realistic estimate should be made to determine how much of this waste would be eliminated by the use of medical isotope therapy. The cost savings to the medical community would be substantial, and should be factored into any costbenefit analysis that the DOE should conduct. These waste disposal cost savings might mean the difference between hospitals closing and remaining solvent. The DOE should also take the lead to assure that proper facilities and methods are available to handle medical isotope wastes from each state and explain how this will be done in the NI PEIS. Nonagreement states pose a serious public health hazard as their facilities have no

1700-7

Response to Commentor No. 1700

1700-7: Medical wastes are regulated by the U.S. Environmental Protection Agency and authorized State agencies. Commercial generation of radioactive waste are regulated by the Nuclear Regulatory Commission or Agreement State. DOE does not have purview over these wastes or the waste generators. This type of analysis requested by the commentor is out of scope of the NI PEIS. DOE's policy prohibits reprocessing of spent nuclear fuel.

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New Medical Technology

legal waste repository. Visits to medical facilities in these areas will show 55 gallon drums containing radioactive waste being stored in hallways, under stairwells, on loading bays, and even in parking lots. Once again, from a national standpoint, the hazardous medical waste volumes are much higher than those generated from the operation of the DOE facilities of Alternate I listed in the PEIS. The 00V should consider enlisting the FFTF in research to determine the best ways to reduce or eliminate the various categories of nuclear waste, including, but not firniled to, medical waste. Although this might be the realm of the NRC and other agencies, the government, including the 1005, should support the best medical diagnosis and treatment options and evaluate all of our needs for the best waste treatment methods implementation with the smallest waste disposal cost and minimum environmental Impact. The compartmentalizing that has occurred in the Federal government is preventing the proper evaluation of the benefits from the use of medical isotopes, and inhibiting a fairer and more coordinated plan necessary to effectively pursue this very promising option. It is crucial that the foregoing be addressed in the NI PEIS. In France, where over 70% of their electricity comes from nuclear reactors and where nuclear power is pretty much a nonissue, there is a nuclear waste reprocessing facility adjacent to a nuclear reactor in Normandy, across the channel from England. In June of 1999, the British government announced that anti_nuclear forces would no longer prevent the United Kingdom from proceeding with its nuclear waste recycling program. The government and DOE should recognize in the N1 PEIS that this waste recycling policy makes sense~ for this country as well, and that the FFTF could play a significant research role In this waste minimization and recycling effort. Please keep "junk science" separate from the N1 PEIS and the realm of public health. The DOE should consider working with Congress and the appropriate federal agencies to address nuclear waste storage and recycling options. This would do much to allay the public's fear about ever_increasing amounts of nuclear waste.

1700-7 (Cont'd)

I ask the DOE to fairly address all of the above points in the N1 PEIS. With this document, the DOE has the opportunity to take the lead in this endeavor. I ask the DOE _ PLEASE, do not play politics on the backs of patients.

Thank you.

Response to Commentor No. 1700

RSNA | Radiological Society of North America Founded in 1915

820 Jorie Boulevard
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FAX: 630/571-7837
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July 21, 1999

Dr. William J. Madia
Pacific Northwest National Laboratory
902 Battelle Blvd
PO Box 99
MISN: K1-46
Richland, WA 99352

Dear Dr. Madia:

Our organization represents over 30,000 practicing radiologists. We are writing to you to express our strong support for a full and open consideration of the restart of the Fast Flux Test Facility (FFTF) and its renewed operation as a user facility to provide irradiation services for the nation's medical, science, and engineering communities.

With its restart, FFTF would provide an extremely valuable resource for the nation's faculty and students by supplying research and educational opportunities related to nuclear medicine, engineering, and nuclear science. The availability of FFTF's proven research capabilities would enhance and extend these efforts, especially in the areas of medical isotope development, production and applications, and materials processing.

The FFTF has the ability to produce large quantities of a variety of medical isotopes. Many of these promising isotopes are currently either unavailable or available in such small quantities from other production facilities that it is difficult to conduct clinical studies with even very small numbers of patients. Research is being hampered or removed from consideration by a lack of these isotopes. Medical isotopes are often the only effective way to properly diagnose and treat serious disease. It is crucial that we, as radiologists, have access to a wide variety of isotopes, including those with high specific activity, appropriate to diagnose, prevent and treat heart disease, cancer, arthritis, and more recently, infectious disease.

The FFTF is a unique facility with capabilities that no other device in the world can match. It also has an outstanding record of research, operational excellence, and environmental stewardship. A reactor like FFTF might never be built again. Thus, I hope that the decision on its future will fully weigh its considerable merits and many prospective contributions to the nations health and welfare.

Sincerely,

Jerry P. Petasnick, MD
Chairman of the Board

American Society of Nuclear Cardiology

9111 Old Georgetown Road Bethesda, Maryland 20814-1...
(301) 493-2360 FAX (301) 493-2376

July 20, 1999

Dr. William J. Madia
Pacific Northwest National Laboratory
902 Battelle Blvd.
PO Box 99
MISN: K1-46
Richland WA 99352

Dear Dr. Madia:

I am writing to you to express our strong support for a full and open consideration of the restart of the Fast Flux Test Facility (FFTF) and its renewed operation as a user facility to provide irradiation services for the nation's medical community.

With its restart, FFTF could provide an extremely valuable resource for the nation's medical faculty and students by providing both research and educational opportunities related to nuclear science and especially nuclear medicine. The availability of FFTF's proven research capabilities would enhance and extend those efforts, especially in the areas of medical isotope development, production and applications for heart patients.

The FFTF has the ability to produce large quantities of a variety of medical isotopes. Many of these promising isotopes are currently either unavailable or available in such small quantities from other sometimes unreliable production facilities that it is difficult to conduct cardiac studies with even very small numbers of patients. Research is being hampered or removed from consideration by a lack of these isotopes. Medical isotope therapy is generally more effective against disease such as coronary restenosis, at lower cost. It is crucial that we receive a wide variety of isotopes, including those with high specific activity, appropriate to diagnose and treat heart disease.

It is vital that an adequate supply of medical isotopes be available to our members for research, diagnosis and treatment of coronary disease. We fully support the effort behind the FFTF restart.

Sincerely,

Timothy M. Bateman, MD
President

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

SEP-18-00 MON 12:32 PM MEDICAL ISOTOPES FAX NO. 5097379524 P. 14

LOUISIANA STATE UNIVERSITY
MEDICAL CENTER
1542 Tulane Avenue
New Orleans, LA 70112-2822
Telephone: (504) 568-4750
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LSUMC

Department of Surgery

March 5, 1999

The Honorable Bill Richardson
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue SW
Washington, DC 20585

Dear Secretary Richardson,

SHORTAGE OF CERTAIN MEDICAL ISOTOPES AND OUR NEED FOR THE FAST FLUX TEST FACILITY

In March of 1996, I wrote to Senator John Breaux and Senator Patty Murray about our need for high-specific-activity iodine-131. This high-purity radioisotope is *not currently available* from any source anywhere in the world. We understand that it could be produced under a high neutron flux with the high neutron energies available in the core of the Fast Flux Test Facility, near Richland, Washington.

We need high specific activity iodine-131 because we are developing a cancer-targeting peptide that has four binding sites for radioiodine. The standard iodine-131 from Canada is mostly stable (non-radioactive) iodine-127, and these "cold" and useless atoms tend to occupy the binding sites on the targeting protein that we need for radioactive iodine-131. Our new approach will be able to treat patients with cancer cells that express the receptors that bind somatostatin. These cancers include certain lung, brain, colon, neuroendocrine, and pancreatic cancers.

As I previously wrote to Senators Breaux and Murray, one of our greatest challenges in developing new cancer treatments is the acute shortage of the necessary type, quality, and activity of radioisotopes for special applications. We believe that our approach will offer significant new hope to cancer patients who have no other recourses for successful treatment.

For these reasons, I encourage you to support the restart of the Fast Flux Test Facility.

Sincerely yours,

EUGENE A. WOLTERING, M.D., F.A.C.S.
The James D. Rives Professor of Surgery
and Neuroscience
Chief, Section of Surgical Endocrinology
Director, Surgical Research

The Children's Hospital • Boston

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

CONTINUE FROM PREVIOUS PAGE 201

The Children's Hospital • Boston
300 Longwood Avenue, Boston, Massachusetts 02115 • (617) 735-6000
THE DIVISION OF NUCLEAR MEDICINE

January 26, 1990

Robert E. Schenter, Ph.D.
HO-36
P.O. Box 1970
Westinghouse Hanford
Richland, WA 99352

Dear Dr. Schenter:

I would like to thank you for the ^{191}Os that you provided us last year for use in our ^{191}Os - ^{191m}Ir generator research program. This material was used in our N.I.H. project to investigate new chemistry related to the basic chemical processes involved in radionuclide generators used in medical applications.

As we discussed, the F.D.A. has given us permission to resume our clinical studies with the ^{191}Os - ^{191m}Ir generator. These studies (funded by the F.D.A. Orphan Drug program) involve injection of the generator eluate directly into the patient and allow measurement of various aspects of cardiac function without the trauma associated with catheterization and with a lower radiation dose than that incurred with currently available radiopharmaceuticals. Additional advantages resulting from the very short half-life of ^{191m}Ir include the ability to perform repeated studies to measure the effects of exercise or pharmaceutical intervention and better imaging statistics because of the higher photon flux that results from the larger administered dose of ^{191m}Ir.

In order to resume these studies, we will require a dependable supply of ^{191}Os that is of high radionuclidic purity. A reasonable estimate for the quantity required is on the order of 2-3 Ci/month. This will allow us to prepare 1-2 generators a month so that we can complete the Phase II clinical studies referred to above. When the Phase II studies are completed, we hope to be able to begin Phase III studies. This will involve a larger number of clinical sites and hence require the production of 3-5 generators/month. At this stage, we will require 3-5 Ci of ^{191}Os per month for a period of 1-2 years.

Once again, thank you for your assistance in establishing a dependable source of this radionuclide.

Sincerely,

Alan B. Packard, Ph.D.
Senior Research Associate

Os-191 APPLICATION

March 12, 1990

A better way of diagnosing heart function in premature babies could spare those infants from unnecessary open heart surgery. Physicians currently have few options when it comes to diagnosis -- and those options aren't without risk, either.

Using a catheter can cause trauma to the infant's fragile circulatory system, while the use of currently available radiopharmaceuticals means giving the premature baby a dose of radiation.

But researchers at the Children's Hospital in Boston have found that using a radioisotope of osmium, a metallic element similar to platinum, not only gives better diagnostic information but results in a lower radiation dose. Used like a bone X-ray, it allows the imaging of softer tissues, such as the heart and blood vessels.

The osmium-191 used in the initial Food and Drug Administration study was made at the Department of Energy's most advanced research reactor, the Fast Flux Test Facility at the Hanford Site in southeastern Washington. As the study is stepped up, researchers say they will need a dependable and greater supply of osmium-191.

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

Reactor/Accelerator Medical Isotopes
R.E. Schenter

REACTOR ONLY

1. Ac227 – Parent of Ra223 – RIT
2. Ag111
3. Au198
4. Au199
5. Br82
6. C14
7. Ce141
8. Cf252 – Brain cancer treatment
9. Co60 – "Gamma knife" Cancer treatment
10. Cs137 - FP
11. Dy165 – Arthritis treatment (2 hr.)
12. Er169
13. Fm255
14. Ga67 – SPECT
15. Gd153 – SPECT calibration – Osteoporosis detection
16. H3
17. Ho166 – Multiple Myeloma treatment – 1.1 day half-life
18. I129
19. I131 – Cell directed therapy ("Smart Bullets") – "RIT" – several forms of cancer
20. Ir192
21. Lu177 –RIT
22. Mo99 – Diagnostic – 40,000 procedures a day in US – comes from Canada, etc. - (Parent for Tc99m)
23. Os191 – Sent to Children's Hospital, Boston from FFTF 1992
24. Os194 – RIT
25. P32 –Heart disease treatment
26. P33 – Requires high energy neutrons
27. Pd109
28. Pt195m
29. Re186
30. Re188 – From W188 generator – for RIT cancer, heart disease treatment
31. Re188 – From Re187 – for RIT cancer, heart disease treatment
32. Rh105
33. Ru105
34. S35
35. Sb119
36. Sc47 – RIT
37. Se75 – Sent to NIH for research from FFTF
38. Sm153 – Bone Cancer Pain Relief – Has FDA approval – "QUADRAMET"
39. Sn113
40. Sr85

Commentor No. 1700: Marlene G. Oliver (Cont'd) New Medical Technology

41. Sr89 – Bone Cancer Pain Relief – Has FDA approval – "METASTRON"
42. Sr89 – from Y89 – "Carrier free Sr89" – bone pain relief – requires high energy neutrons
43. Te123m
44. Th228 – Alpha emitter grand parent of Bi212 (AML, RIT, et al)
45. Th229 – Alpha emitter grand parent of Bi213 (AML, RIT, et al)
46. Ti44
47. Tm170
48. Xe133
49. Y90 - FP
50. Y90 – From Y89 – Liver cancer treatment – "microseeds"
51. Y91 – RIT
52. Yb169

Commentor No. 1700: Marlene G. Oliver (Cont'd) New Medical Technology

ACCELERATOR ONLY

1. As72
2. As73
3. At211 – Alpha emitter – RIT (Brain Cancer treatment)
4. Ba128
5. Be7
6. Bi205
7. Bi206
8. Bi207
9. Br75
10. Br76
11. C11 – Very short lived PET
12. Co55
13. Co56
14. Cu61
15. F18 – Very short lived PET
16. Fe52
17. Ga67
18. Ga68
19. Gd146
20. Gd148
21. Ge68
22. Hf172
23. Hg195m
24. I123
25. I124
26. In111 – Diagnostics
27. Kr81m
28. Lu172
29. Lu173
30. Mg28
31. Mn52
32. N13 – PET
33. O15 – PET
34. Pb203
35. Pm145
36. Rb81
37. Rb82
38. Ru97
39. Se72
40. Sr82
41. Ta178
42. Te118
43. Ti44
44. Tl201- Blood flow studies

45. V48
46. W178
47. Y86
48. Y87
49. Zn62
50. Zr88

REACTOR OR ACCELERATOR

1. Ag105
2. Ag108m
3. Ag109m
4. Al26
5. As74
6. Br77
7. Br80m
8. Cd109
9. Ce139
10. Cr51
11. Co57
12. Cu62
13. Cu64 – RIT
14. Cu67 – RIT – Accelerators can't keep up with demand (see Denardo's comments)
15. F18
16. Fe55
17. Fe59
18. Hg197
19. Ho163
20. I125 – Brachytherapy ("seeds") – Prostate, Breast, et al treatments
21. Na22
22. Pd103 – Brachytherapy ("seeds") – Prostate, Breast, et al treatments
23. Pm149
24. Rb83
25. Rb86
26. Rh105
27. Ru103
28. Sc44
29. Sc46
30. Sc47
31. Si32
32. Sm145
33. Sn117m
34. Ta179
35. Tc95m
36. Tc96
37. Xe122
38. Xe127 – Diagnostics – "Xe-127 production continues to be a problem for the combined capabilities of BNL and LANL..."
39. Y88
40. Zn65
41. Zr89

Commentor No. 1700: Marlene G. Oliver (Cont'd)
New Medical Technology

FFTF Isotopes and Their Applications*

Isotope	Application	Isotope	Application
Ac-227	Mabs - Alpha Emitters	Os-191	Heart Disease Diagnostics
Ac-227	Tracers for Environmental Applications	Os-194	Mabs - Beta Emitters
Ar-37	Nuclear Physics Experiments	P-32	Medical Applications
C-14	Medical Applications	P-33	Bone Cancer Pain Relief
Cd-109	Heart Disease Diagnostics	Pd-103	Prostate Cancer Treatment
Cd-109	X-Ray Fluorescence	Pm-147	Heat Power Source
Cf-252	Brachytherapy and Other Cancer Treatments	Pt-195M	Diagnostic Applications
Cf-252	Radiography	Re-186	Bone Cancer Pain Relief
Co-57	Gamma Camera Calibration	Re-186	Mabs - Beta Emitters
Co-60	General Applications	S-35	Heart Disease Diagnostics
Cu-64	Medical Applications	Sc-47	Bone Cancer Pain Relief
Cu-67	Mabs - Beta Emitters	Se-75	Diagnostic Applications
Dy-165	Medical Applications	Sm-145	Prostate, Brain, and Thyroid Cancer Treatment
Es-254	Nuclear Physics Experiments	Sm-153	Bone Cancer Pain Relief
Fe-55	Medical Applications	Sn-117M	Bone Cancer Pain Relief
Gd-153	Diagnostic Applications	Sr-89	Bone Cancer Pain Relief
Ho-166	Bone Marrow Ablation	Th-228	Mabs - Alpha Emitters
I-125	Prostate Brain, and Thyroid Cancer Treatment	Th-228	Tracers for Environmental Applications
I-125	Diagnostic Applications	Th-229	Mabs - Alpha Emitters
I-131	Mabs - Beta Emitters	Tm-170	Brachytherapy and Other Cancer Treatment
I-131	Prostate, Brain, and Thyroid Cancer Treatment	Tm-170	Heat Power Source
Ir-192	Brachytherapy and Other Cancer Treatments	W-188	Mabs - Beta Emitters
Ir-192	Radiography	W-188	Tracers for Environmental Applications
Mo-99	Diagnostic Applications	Xe-127	Diagnostic Applications
Na-24	General Applications	Xe-133	Diagnostic Applications
Ni-63	Heat Power Source		

*All the isotopes shown in this table have been previously produced, sold and/or requested for FFTF Production.

Commentor No. 1702: J. Christopher Hormel

J. Christopher Hormel
P.O. Box 153
Bliss, ID 83314
208/352-4234
jchormel@micron.net

September 18, 2000

Ms. Colette Brown
Department of Energy
Office of Space and Defense Power Systems

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

Dear Ms. Brown,

I am concerned about the proposal to expand the civilian nuclear infrastructure contained in the above referenced document. As a member of the Snake River Alliance I am concerned about the existing waste at the INEEL, and its potential contamination of the Snake River Aquifer. The last thing we in Idaho need is a plan to generate more nuclear waste at the INEEL - a site that urgently needs to be cleaned up already. Therefore, I strongly urge you not to pursue the plutonium-238 production mission outlined in your PEIS. 1702-1 1702-2

My specific concerns about the consequences of the proposed activities include: 1702-3
- Increasing the amount of liquid high level waste at the INEEL 1702-4
- the inherent risks in plutonium production at INEEL or any other site 1702-5
- the potential for a catastrophic release of plutonium during lift-off or re-entry of a space probe carrying this material 1702-6
- the precedent that would be set if our country re-starts its plutonium re-processing activities and the resulting negative impact upon nuclear non-proliferation efforts.

Considering the factors I've mentioned above, I strongly urge you to select alternative 5 in the current PEIS. Doing so would allow the INEEL facilities concerned to continue their focus on cleaning up the existing mess left over from past nuclear weapons work, and would not make worse an already difficult task of limiting the proliferation of nuclear weapons. Thank you for the opportunity to comment on this plan. 1702-7 1702-1

Respectfully Yours,

J. Christopher Hormel

Response to Commentor No. 1702

1702-1: The commentor's concerns regarding existing waste at INEEL and contamination of the Snake River Plain aquifer are noted. Contamination of the Snake River Plain aquifer is discussed in Sections 3.3.4.2.1 and 3.4.2.2. As discussed in Section 4.3.2.1.13, implementation of nuclear infrastructure alternatives that would involve the Fluorinel Dissolution Process Facility would generate additional waste at INEEL. This section also describes the disposition of waste that would be generated under the nuclear infrastructure alternatives. Implementation of the nuclear infrastructure alternatives would not affect funding or cleanup schedules at INEEL.

1702-2: DOE notes the commentor's opposition to the plutonium-238 mission.

1702-3: 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.

1702-4: The facilities evaluated in the NI PEIS can be safely operated to support the nuclear infrastructure missions described in Section 1.2 of Volume 1. Sections 4.2-4.6 of Volume 1 provide the results of the evaluation of potential health impacts that would be expected to result from implementation of the alternatives, including normal operations and a spectrum of accidents that included severe accidents. The environmental analysis showed that the radiological and nonradiological risks associated with each of the alternatives would be small.

1702-5: DOE notes the commentor's concern for NASA's use of nuclear materials for space missions, although this issue is beyond the scope of this PEIS. Through a Memorandum of Understanding with NASA DOE provides radioisotope power systems, and the plutonium-238 that fuels them, for space missions that require or would be enhanced by their use. 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.

1702-6: It is not true that resumption of plutonium-238 production constitutes a return to reprocessing. The aqueous technique 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 in portions of the complex process to extract plutonium-239. However, as discussed in PEIS Sections S.3, 2.2.3 and A.1.4, this technology 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. Plutonium-238 extraction is not reprocessing. Unlike plutonium-239, plutonium-238 is not used

Commentor No. 1702: J. Christopher Hormel (Cont'd)

Response to Commentor No. 1702

in nuclear weapons, but rather it would be used as a power and heat source for NASA space missions.

The Nuclear Infrastructure Nonproliferation Impact Assessment, published in September 2000, confirms that extracting plutonium-238 from irradiated targets would not undermine nonproliferation goals. In this report, DOE recognizes that proliferation concerns might be raised related to one of the technical assessment factors, "reduction in attractiveness of material forms," due to the fact that, in the extraction of plutonium-238, the remaining unconverted neptunium a weapons-useable fissile material used as target material for conversion into plutonium-238, must also be recovered (not produced) purified, and recycled. This is unavoidable (unless the United States elects to neither produce or purchase plutonium-238), and 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. However, while the fact that concerns might be raised is valuable to the record of decision process, it does not constitute an inconsistency with or departure from nonproliferation policy, and plutonium-238 is needed to fulfill our missions. Further, in the event that plutonium-238 production is resumed in the United States, the total separated stocks of neptunium would be reduced over time in an irreversible manner since there is a moratorium on U.S. spent fuel reprocessing. This overall reduction in a weapons-useable material would mitigate the potential concerns related to material attractiveness, and offer an additional method to pursue U.S. nonproliferation goals. DOE's proposed approach in this mission, and its rigorous nonproliferation impact assessment, demonstrate its commitment to nonproliferation policy, domestically and in the international community.

1702-7: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

Commentor No. 1703: Tatiana Maxwell

September 18, 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. 1703-1

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. 1703-2

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. 1703-3 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 1703-4

Response to Commentor No. 1703

1703-1: 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.

1703-2: 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.

1703-3: 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

Commentor No. 1703: Tatiana Maxwell (Cont'd)

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. **1703-4 (Cont'd)**

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* 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. **1703-5**

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. **1703-6**

Sincerely,

Tatiana Maxwell

Tatiana Maxwell
P.O. Box 4856
Jackson, WY 83001

Response to Commentor No. 1703

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

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

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.

1703-4: 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.

1703-5: 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. 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.

1703-6: 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.

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. 1704: Lois R. Spinrad

09/18/2000 17:15 5039434391 MUNN & MURANAKA PAGE 01

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Draft PEIS Comment Form

I would urge that the Fast Flux Test Facility (FFTF) be brought into operation again as soon as is possible. Our country needs to use in various fields of medicine, to benefit many patients without turning to foreign sources.

Our space research can benefit from it without turning to other countries for energy sources.

My husband, Bernie Spinrad, now deceased, passed on to me his admiration and respect for the unprotected of these facilities. His history and research could be decisive of great value.

Thank you,
Lois Spinrad

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

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

Name (optional): Lois R. Spinrad

Organization:

Home/Organization Address (circle one): 2315 NE 65th St, Apt 105

City: Seattle State: WA Zip Code: 98115 7056

Telephone (optional):

E-mail (optional):

COMMENTS MUST BE POSTMARKED BY September 11, 2000

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

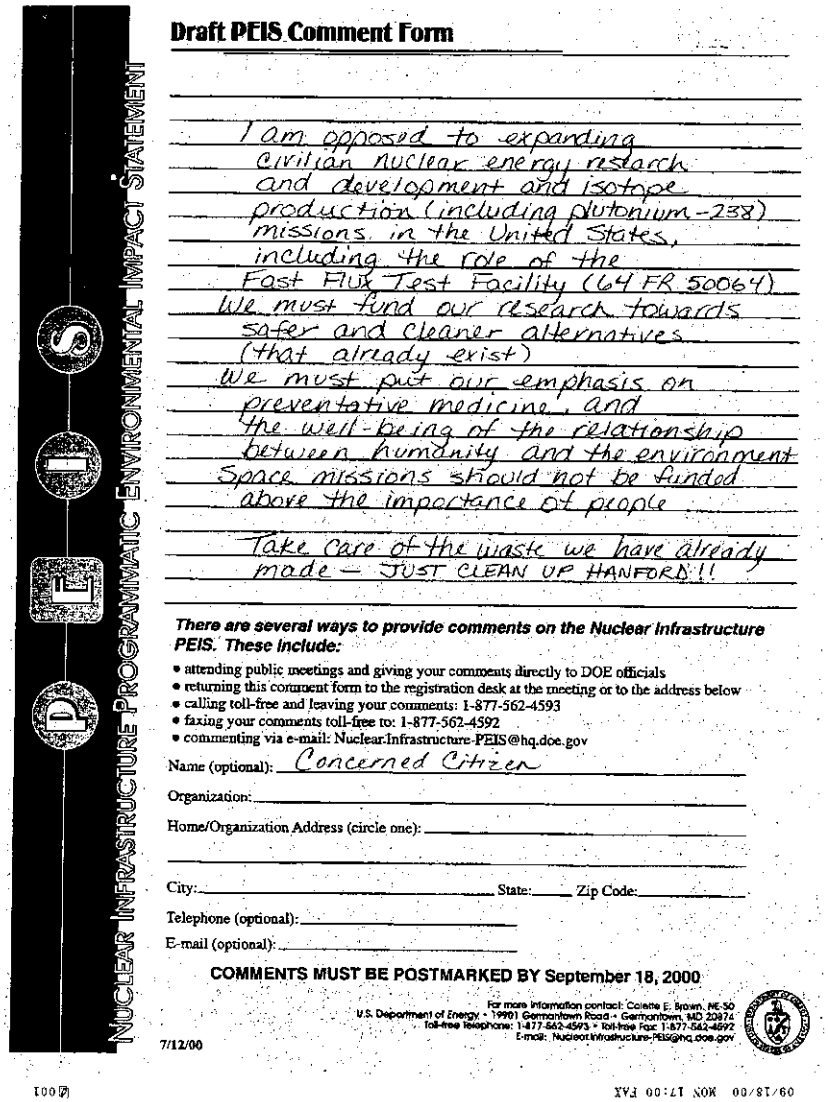
7/12/00

1704-1

Response to Commentor No. 1704

1704-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1705: Anonymous



NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

Draft PEIS Comment Form

I am opposed to expanding civilian nuclear energy research and development and isotope production (including plutonium-238) missions in the United States, including the role of the Fast Flux Test Facility (64 FR 50064). We must fund our research towards safer and cleaner alternatives (that already exist). We must put our emphasis on preventative medicine, and the well-being of the relationship between humanity and the environment. Space missions should not be funded above the importance of people.

Take care of the waste we have already made — JUST CLEAN UP HANFORD!!

1705-1

1705-2

1705-3

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

Name (optional): Concerned Citizen

Organization:

Home/Organization Address (circle one):

City: State: Zip Code:

Telephone (optional):

E-mail (optional):

COMMENTS MUST BE POSTMARKED BY September 18, 2000

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

7/12/00

09/18/00 MON 17:00 FAX

001

Response to Commentor No. 1705

1705-1: DOE notes the commentor's opposition to expanding DOE's nuclear infrastructure to meet the three missions addressed in the NI PEIS and to the restart of FFTF.

1705-2: DOE notes the commentor's interest in alternative energy sources and preventative medicine, although issues of research and development of alternative energy sources and preventative medicine are beyond the scope of this Nuclear Infrastructure PEIS. Consistent with its mandates under the Atomic Energy Act, DOE is proposing this enhancement for the purposes of addressing three primary needs: 1) to support the 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 for which the U.S. has no long-term, assured supply; and 3) to support civilian nuclear energy research and development in order to maintain the clean, safe, and reliable use of nuclear power as a viable component of the United States' energy portfolio.

1705-3: 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.

Commentor No. 1706: J. L. Polehn

08/18/00 MON 12:54 FAX 509 376 3661 REGULATORY UNIT 001

Draft PEIS Comment Form

Dear Ms. Brown:

I am *for* the restart of the FFTF facility to produce the needed radioisotopes. As stated in the PEIS, these isotopes are needed to provide researchers with the isotopes to do their work (e.g., improve the standard of living of people in the area of medicines, power production, development of new technologies). I feel it is short-sighted to not use a facility that the American taxpayer has already paid for. In addition, the ability to obtain Congressional monies for long-term tasks appears to be not a sure thing and becomes even more at risk since it does not appear that Congress is able or willing to fund such projects. Also, use of FFTF will allow a more immediate production of radioisotopes where the alternative approaches are likely to result in extensive delays of radioisotope production.

Thank your for the opportunity to comment on this PEIS.

Sincerely,

J. L. Polehn Ms. JLPolehn
PO Box 482
Richland, WA 99352

509-372-0767

NUCLEAR INFRASTRUCTURE PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

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

Name (optional): _____

Organization: _____

Home/Organization Address (circle one): _____

_____

City: _____ State: _____ Zip Code: _____

Telephone (optional): _____

E-mail (optional): _____

COMMENTS MUST BE POSTMARKED BY September 11, 2000

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

7/12/00

1706-1

Response to Commentor No. 1706

1706-1: DOE notes the commentor's support for Alternative 1, Restart FFTF.

Commentor No. 1707: Hyun Lee Heart of America Northwest

From: Heart of America Northwest
[SMTP:OFFICE@HEARTOFAMERICANORTHWEST.ORG]
Sent: Monday, September 18, 2000 5:55:50 PM
To: INFRASTRUCTURE_PEIS, NUCLEAR
Subject: Comments on Draft NI PEIS from Neart oif America Northwest
Auto forwarded by a Rule

To whom it may concern,

Attached is Heart of America Northwest and Legal Advocates for Washington's comments on the Draft PEIS on Restarting the FFTF reactor at Hanford. If you have problems with the document, please write or call us at (206) 382_1014. Thanks

Hyun Lee

Response to Commentor No. 1707

1707-1: 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.

1707-2: Regarding nonproliferation policy, PEIS Alternative 1, which included the restart of FFTF, was evaluated along with a range of reasonable alternatives and options, in the Nuclear Infrastructure Nonproliferation Impact Assessment, published in September, 2000, and placed on the DOE web site (http://www.nuclear.gov) for public dissemination. The restart of the FFTF reactor would not violate U.S nuclear nonproliferation policies. As stated in Appendix Q of the PEIS, "FFTF restart would fully meet nonproliferation objectives." This means that there are no significant identified concerns contrary to U.S. nonproliferation objectives.

1707-3: DOE has evaluated the environmental impacts of a range of reasonable alternatives to fulfill the requirements of the proposed action. The commentor is referred to Volume 1, Section 2.5 of the PEIS for specific details.

1707-4: The commentor outlines a number of issues to be addressed within Comment 1 (including Comment d in the Overview) in the submittal. To ensure that each issue is addressed, the responses have been organized to match the numerical subheadings in the submittal.

Commentor No. 1707: Hyun Lee (Cont'd) Heart of America Northwest

Comments of Heart of America Northwest And Legal Advocates for Washington On the US Department of Energy's Programmatic Environmental Impact Statement On Restart of the FFTF Nuclear Reactor at Hanford (Nuclear Infrastructure PEIS)
September 2000
(Supplementing comments given orally, and materials turned in, at hearings)

Overview:

USDOE issued its Draft Programmatic Environmental Impact Statement (Expanded Nuclear Infrastructure PEIS, called "PEIS" herein) on Restarting the FFTF Nuclear Reactor at the end of July, 2000. The EIS illegally failed to disclose:

a) what would be done with the wastes from restart of the FFTF reactor and the proposed resumption of Plutonium processing at Hanford; **1707-1**

b) whether restart of the FFTF reactor violated U.S. nuclear non_proliferation policies; **1707-2**

c) reasonable alternatives (including some recommended by the USDOE's own blue ribbon medical advisory committee on isotope production) for producing research medical isotopes and assisting commercial isotope providers in producing isotopes for commercial markets; **1707-3**

d) that the same blue ribbon medical advisory committee concluded in a report provided to USDOE's Office of Nuclear Energy (the author of the PEIS) in April "that the FFTF will not be a viable source of research radioisotopes", and, that the USDOE has a sound policy against investing in restart or new construction to serve commercial isotope producers; and, **1707-4**

e) the costs of restarting the FFTF reactor and costs of alternatives _ along with the impact on USDOE's ability to meet its nuclear waste cleanup obligations if it prioritizes funding for restart ahead of funding its cleanup program. **1707-5**

For each of these areas, USDOE published separate reports _ which were not available to the public for comment at the time of the public hearings. The National Environmental Policy Act (NEPA)

Response to Commentor No. 1707

Overview Comment d: The issues with respect to the NERAC Subcommittee recommendations and DOE's policy against investing in restart or new construction are addressed in the response for 1.0 provided below.

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

The conclusions presented in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, (April 2000) regarding the suitability of FFTF to produce research isotopes in a timely and cost-efficient manner were made in the context of the facility producing research isotopes as its sole mission. It would not be cost effective to restart FFTF for the singular purpose of

Commentor No. 1707: Hyun Lee (Cont'd) Heart of America Northwest

requires that the agency disclose in one report (the EIS) all reasonably foreseeable impacts from proposed actions and interrelated decisions and all reasonable alternatives. Even where the reports were published long in advance of the publication of the PEIS, USDOE failed to disclose in the PEIS those reports' conclusions and suggested alternatives. Nor was the public reasonably notified of the existence of those reports and their relevance to the PEIS (i.e., they were not on the PEIS website). Other reports were deliberately made available only after the public hearings had ended.

1707-5 (Cont'd)

Process Was Legally Inadequate: The PEIS fails to meet the substantive requirements of Washington's State Environmental Policy Act as well as NEPA. Site specific impacts (i.e., impacts from specific waste dumps or treatments) are not disclosed. USDOE refused to provide legally adequate notice and to follow the requirements of the Hanford Clean_Up Agreement Community Relations Plan for notice and conduct of the hearings. USDOE will not legally be able to utilize this PEIS for amending the Agreement or obtaining State hazardous waste (RCRA) permits. Our specific numbered comments begin on the next page.

1707-6

1. The PEIS fails to disclose that the FFTF nuclear reactor is not suited for a research medical isotope production mission, and falsely implies that production of research isotopes is a mission for which the Department is considering restart of the reactor. The PEIS fails to disclose and discuss the policy of the Department against making major capital investment decisions (i.e., restart of a reactor or new construction) to serve a commercial isotope production mission (i.e., making space available in a reactor core or accelerator for production of commercial isotopes on a marginal cost reimbursed basis is considered only a "piggyback" mission). The PEIS and Record of Decision must fully disclose and discuss the difference between research isotope production missions and commercial isotope production, along with the full disclosure and consideration of the Department's own blue ribbon medical advisory committee (NERAC Subcommittee for Isotope Research and

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producing small quantities of various research isotopes. However, sustained operation of FFTF for the production of larger quantities of both research and commercial isotopes would be viable if operated in concert with producing plutonium-238 and conducting nuclear energy research and development for civilian applications. As the NERAC report states: "In limited instances, the DOE possesses unique resources, e.g., the high flux of fast neutrons and large irradiation volume in FFTF, that could be utilized for the production of some radioisotopes, but is best suited for commercial interests who might consider its use for isotope production." In recognition of these constraints on its operational feasibility, the NI PEIS only evaluates use of FFTF when coupled with the other DOE missions.

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 the production of radioisotopes for medical applications and research. However, DOE is not proposing to restart or build any new facility for the primary mission of serving the commercial medical isotope market. DOE's intent is to complement commercial sector capabilities to ensure that a reliable supply of isotopes is available in the United States to meet future demand, and to encourage the commercial sector to privatize the production of isotopes that have established applications to a level that would support commercial ventures.

1.1 The referenced joint congressional letter has been logged in as Commentor No. 158 and the responses are included therein.

1.2 The references to research isotope production are not misleading The NERAC Subcommittee concludes the following, "Implement a contingency plan to guarantee an uninterrupted radioisotope and stable isotope supply for the country's research needs." The conclusions are addressed in more detail in Paragraph 2 of Response 1.0 and in Section 1.2 of Volume 1 of the PEIS. Further, as discussed in Paragraph 1 of Response 1.0, the proposed action includes both research- and commercial-scale isotope production.

1.2.1 DOE has sought independent analysis of trends in the use of medical isotopes, and of its continuing role in this sector, consistent

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Production Planning, Final Report, April, 2000): "The Subcommittee concludes that the FFTF will not be a viable source of research radioisotopes.":
1.1. As stated in the submitted joint Congressional letter (by Senator Wyden, Representatives Baird, McDermott, Smith, Blumenauer, DeFazio, Hooley and Wu), FFTF is not suited for production of medical isotopes for research (i.e., small quantities, quick turnarounds, for use in research or clinical trials as opposed to large scale batches for commercial markets produced on behalf of private pharmaceutical companies on a marginal cost basis).
1.2. The conclusion of the NERAC Subcommittee for Isotope Research and Production Planning should be clearly stated in the PEIS, and misleading references to research medical isotope production missions for the FFTF alternative (or all alternatives for the PEIS) must be removed:
1.2.1. In "Purpose and Need for Agency Action" (Section 1.2 of the PEIS), USDOE falsely presents the need for, and primary missions of, expanded infrastructure considered in the PEIS, including for the FFTF reactor restart, as: "DOE must provide an adequate supply of isotopes to keep pace with the growing and changing needs of the research community if it is to serve this key role." (referring to role of DOE to "develop isotopes"). Page 1_3.
1.2.2. There are numerous other misleading references throughout the PEIS to research isotope production missions as providing the justification or primary missions under consideration for restart of the FFTF reactor.
1.2.2.1. I.e.: The only quote from the Subcommittee on Isotope Research and Production Planning in the PEIS refers to the need to provide capability to produce isotopes for research: "It is now widely conceded that limited availability of specific radionuclides is a constraint on the progress of research." PEIS at 1_3.
1.2.2.2. I.e.: "Research isotopes that have shown promise... are not being explored because of their lack of availability or high price." Id.
1.2.3. The Office of Nuclear Energy uses this PEIS as an advocacy document, selectively quoting its NERAC Subcommittee to make it appear that the Subcommittee supports the need for investment in the FFTF restart alternative or other alternatives in this PEIS,

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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 rate of medical isotope use is 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.

1.2.2 The commentor's contention that numerous references to research isotope production are misleading is not true. This issue is addressed in Paragraph 1 of Response 1.0 and in Response 1.2.1.

1.2.3a The issue regarding the NERAC Subcommittee recommendations concerning the suitability of the FFTF to produce research isotopes is addressed in Paragraph 2 of Response 1.0.

1.2.3b The mission under consideration is for the production of both research- and commercial-scale isotopes. This issue regarding the production of both isotope types is addressed in Paragraph 1 of Response 1.0.

1.2.3.c The issues with regard to DOE policy precluding the restart or building new infrastructure for commercial interests are addressed in Paragraph 3 of Response 1.0.

1.2.5 The issues with respect to the research- and commercial-scale isotope production as well as the associated restart or building new infrastructure are addressed in Paragraphs 1 and 3, respectively, of

without disclosing that:
a) "The Subcommittee concludes that the FFTF will not be a viable source of research radioisotopes." (NERAC Subcommittee Report at 31, April, 2000);
b) the mission under consideration for isotopes in this PEIS (at least for Alternative 1, restart of FFTF) is for support of commercial production, not for research purposes; and,
c) USDOE has a sound policy that precludes the investment in restart or building new infrastructure for the purpose of a primary mission of serving commercial isotope production (as opposed to research).

1707-4 (Cont'd)

1.2.4. The PEIS fails to disclose that serving a commercial isotope production mission involves subsidizing the production of isotopes for commercial interests, who pay only the marginal cost of reactor or accelerator time and none of the infrastructure investment costs or waste costs.

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1.2.5. The PEIS and Battelle's 1999 business plan place heavy emphasis on FFTF making research isotopes. Furthermore, most of the pro_FFTF statements by elected officials (E.g: Senator Gorton's statement) and from proponents at the hearings focused on production for research, rather than to serve commercial customers. This was encouraged by the FFTF Project and Office of Nuclear Energy, and demonstrates the need for the PEIS and Record of Decision to clearly state that FFTF is not under consideration for a research production mission, and that the USDOE will not make restart or construction of new facilities decisions based on consideration of serving commercial isotope producers as a primary mission.
1.2.6. The only logical conclusion is that the Department should eliminate the alternative of restart of the FFTF reactor from consideration because it is not a viable means to meet the research isotope production mission and the Department will not (and should not) consider restart for purposes of serving a commercial isotope production mission.
1.2.6.1. USDOE has a policy against restarting any facility or building a new facility for a primary mission of serving the commercial medical isotope market. This means that USDOE

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Response 1.0. The 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.

1.2.6 DOE notes the commentor's opposition to the restart of FFTF.

1.2.6.1 This issue with regard to DOE policy precluding the restart or building new infrastructure for commercial interests is addressed in Paragraph 3 of Response 1.0.

1.2.6.2 DOE's isotope production mission is discussed in the NI PEIS and includes both research- and commercial-scale isotope production. Specific details with regard to these issues are addressed in Paragraphs 1 and 2 of Response 1.0.

1.2.7 The commentor refers to the Secretarial sponsored dialogue on FFTF (September 5 and 6, 2000). The participants in that meeting, including the "Heart of America Northwest," signed a confidentiality agreement pledging not to discuss the meeting details in public. Referring to discussions that occurred in that meeting in this letter is a violation of that confidentiality agreement.

The NERAC Subcommittee for Isotope Research and Production Planning did not conclude that the decision on FFTF should not be based on using FFTF for medical isotopes. The Subcommittee said that because of its size the FFTF was more suited to producing commercial quantities of medical isotopes needed for diagnosis and treatment, and not the much smaller research quantities needed for testing and trials. The Program Scoping Plan for the Fast Flux Test Facility (August 1999) essentially concurred with that recommendation, stating that only $1.5M of the projected $31M per year revenue (2005-2010) and $1.0M of the projected $61M per year revenue (2010-2020) was expected to come from producing clinical trial quantities of targeted isotopes. And even that assumption for FFTF producing clinical quantities was based on that fact that if operating for other missions, producing clinical quantities of specialized isotopes for which FFTF was especially qualified would have a small impact on other plant operations. The comments about the Program Scoping Plan

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should NOT make a decision to restart FFTF based on consideration of whether it will serve the commercial medical isotope market. Commercial isotope production (where the companies pay what DOE calls the full cost, but which is just the marginal cost for the irradiation time in the reactor or accelerator) is supposed to be a "piggyback" only mission. Research isotope production, on the other hand, may be a primary mission for determining if a facility is built or restarted. This policy, has very sound underpinnings. USDOE should not be in the business of building or restarting facilities to serve commercial customers _ especially since this provides them access to subsidized facilities that their competitors do not have access to, and Congress has not told DOE to construct and operate facilities for the benefit of private companies.

1707-4 (Cont'd)

1.2.6.1.1. The Cost report _ which must be incorporated into the PEIS and reissued for public comment _ and PEIS must be modified to disclose the cost subsidies that the Department of Energy would incur to provide new infrastructure for meeting commercial isotope producers' market requests.

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1.2.6.2. Nowhere in the PEIS does USDOE disclose that FFTF is not suited, nor under consideration for, research medical isotope production as a major mission. This must be prominently disclosed.

1.2.7. The Chair of USDOE's NERAC Subcommittee on Isotopes, Dr. Richard Reba (Chair, University of Chicago Radiology Dept.) spoke to the Secretarial sponsored dialogue on FFTF (September 5 and 6, 2000). The following points need to be addressed in the PEIS and Record of Decision:

* subcommittee felt that the decision on FFTF should not be based at all on using FFTF for medical isotopes. He reiterated that the committee concluded that FFTF should not have a mission of making research isotopes.
* the "business plan" prepared by Battelle last year, and on which Secretary Richardson based his decision to go ahead with considering to restart FFTF, was entirely suspect in the eyes of the blue ribbon medical committee. It seemed to rely heavily on research medical isotopes, which the panel found FFTF not to be suited to produce. The committee encouraged Battelle to seek

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underestimating or overestimating production rates, costs, or markets between now and 2045 are very subjective. The plan was a projection, but the production rates were all based on validated technical models (proven through actual previous isotope production runs at the FFTF), and the economics were based on a business model that was independently reviewed by Dr. Howard Kaufold of the Wharton Business School and using financial information from previous expert reports, as well as multiple surveyed government and private industry companies.

1707-5: The commentor raises a number of cost issues. To assure each issue is addressed, the responses have been organized to match the numerical sub-headings in the submittal.

Overview Comment e: The NI PEIS discloses and analyzes all pertinent report information needed to evaluate the environmental impacts of reasonable alternatives to fulfill the requirements of the DOE missions. The costs and nuclear nonproliferation impacts of alternatives are not required by NEPA and CEQ regulations to be included in an EIS. DOE prepared a separate Cost Report and Nuclear Infrastructure Nonproliferation Impacts 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 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 website (http://www.nuclear.gov) and in the public reading rooms. DOE has also provided summaries of the Cost Report and Nuclear Infrastructure Nonproliferation Impacts Assessment in this Final NI PEIS.

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

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commercial customers for isotope production at FFTF _ only if the reactor was restarted for other purposes;
* the business plan was never peer reviewed;
* the plan underestimated the cost of preparing the reactor and infrastructure to make isotopes at FFTF and Hanford facilities;
* the plan overestimated the market share for FFTF and the revenue isotopes would bring in;
* the plan underestimated the cost of making isotopes at FFTF;
* the plan overestimated the rate at which FFTF could produce isotopes;
* the projections for isotope need and FFTF market share, the projected costs and the rate of production should all be peer reviewed _ or a new, independent study done with peer review _ before money is invested to make the changes needed to produce isotopes in FFTF.

Each of these points must be fully reconsidered in the PEIS. **1707-4 (Cont'd)**

2. The PEIS must consider availability of other sources of research and commercial production of medical isotopes from Canadian reactors, universities and hospitals, commercial reactors, and private isotope production facilities in the US and abroad. **1707-7**

2.2. The PEIS fails to consider all reasonable alternatives, and does not even disclose the existence of alternatives recommended by the Department's own NERAC Subcommittee on Isotope Research and Production Planning; i.e., the availability of investment or subsidy to the University of Missouri facilities, the capacity of private companies in Texas (including the company that purchased the accelerator from the Super Conducting Super Collider). **1707-8**

2.3. These facilities can clearly meet both research and commercial production demands.

2.4. The PEIS must fully disclose and consider the availability of USDOE's own facilities to meet all or portions of reasonable forecasts for research medical isotopes, and to use unused capacity for commercial isotope production consistent with Departmental policy. **1707-9**

2.5. The PEIS fails to disclose the new construction of an accelerator at Los Alamos for isotope production, and whether similar additions can be made for additional capacity.

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schedules for restoration of all parts of the Hanford Site. DOE is fully committed to honoring this agreement.

The draft Waste Minimization and Management Plan for the Fast Flux Test Facility (May 2000) and the NERAC Isotope Subcommittee Report (April 2000) were referenced in the NI PEIS and were available prior to the public hearings.

As detailed in Section 4.3.1.1.13 and 4.3.3.1.13 of the NI PEIS and elsewhere, DOE has developed the draft Waste Minimization and Management Plan to incorporate pollution prevention and waste minimization practices in its consideration of the future of FFTF. This plan identifies DOE's preferred options for management, treatment, and/or disposition of all waste streams related to the restart and operation of FFTF. The Waste Minimization and Management Plan for the Fast Flux Test Facility is in preparation. A draft of this plan was submitted to the States of Washington and Oregon for review and comment. The draft plan is available on the FFTF website (http://fftf.org/reports) and in the DOE public reading rooms.

Section 1.2 of Volume 1 of the PEIS discusses the recommendations and findings of the Nuclear Energy Research Advisory Committee (NERAC) contained in the NERAC Subcommittee for Isotope Research and Production Planning Final Report, as addressed in the response to Comment 1707-4. The commentor's claim that DOE failed to make the whole of this report available for public review is false. The NERAC report and the earlier Expert Panel report entitled Expert Panel: Forecast Future Demand for Medical Isotopes, were made available to the public in the public reading rooms and on the NE web site (http://www.nuclear.gov).

1.2.4 and 1.2.6.1.1: 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

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2.6. The PEIS mentions only in passing that 50% of current USDOE capacity at reactors and accelerators is utilized, and the additional 50% could be utilized to meet all or a significant portion of USDOE's claimed demand for isotopes. This is a reasonable alternative to all proposed actions in the PEIS.

1707-9 (Cont'd)

2.7. If less than 5 kilograms per year of Plutonium 238 production was necessary, the Department fails to disclose in the PEIS that the Advanced Test Reactor (ATR) would have adequate capacity to produce isotopes that it is claimed FFTF is the only option for.
2.8. The PEIS fails to disclose that NASA does not have a need for 5 kilograms of Plutonium 238 per year, and falsely asserts that the current Radioisotope Thermoelectric Generators are the only technology that NASA can utilize for planned space missions.
2.9. The PEIS fails to disclose that on May 22, 2000 _ two months before the release of the Draft PEIS _ NASA informed USDOE that it intended to utilize the Sterling generator technology, which reduces the demand for Pu238 dramatically.
2.10. The PEIS fails to disclose that production of 5 kilograms of Pu238 per year would be a rate supporting an incredible space mission once every eight months _ which is far in excess of any reasonable forecast of Congressional approval of future space missions.

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2.11. If the demand for Pu238 is greatly reduced, it can be met with a reasonable alternative of purchases from Russia, and a second reasonable alternative of purchases combined with production of smaller quantities (and not necessarily in every year) at USDOE facilities. These alternatives are reasonable and must be fully considered in the PEIS.
2.12. The justification for the consideration of the restart of the FFTF reactor is eliminated, and the alternative must be dropped, if the reactor is not under consideration for a primary mission of research medical isotopes; production capacity exists at ATR and other USDOE facilities and in the private sector (nationally and internationally) for commercial isotopes; ATR has capacity to produce medical isotopes if it is either not producing Pu238 or is producing much less than 5 kilograms per year; and, if NASA's actual reasonably forecast requirement is much less than five kilograms of Pu238 per year.

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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. Even so, DOE continues to produce about 90 percent of the isotopes at its facilities.

6.0: This issue is addressed in the response to Overview Comment e.

11.5, paragraph 7, sentence 3: For Alternative 1 options, the PEIS assumes that the operational facilities referenced by the commentor (i.e., Radiochemcial Processing Laboratory ([Building 325] and Building 306-E) are adequate to support material storage, target fabrication, and medical isotope processing activities. The alternative does not consider construction of new facilities and such costs are therefore not included under Alternative 1 in the Cost Report.

1707-6: This PEIS has been prepared in accordance with the provisions of NEPA (42 U.S.C. 4321 et seq.) and the related CEQ and DOE implementation regulations (40 CFR 1500 through 1508 and 10 CFR 1021, respectively. While it is true that Washington State agencies are governed by SEPA in making decisions regarding issuance of environmental permits for activities at Hanford, DOE's responsibilities with regard to environmental impact analysis are dictated by NEPA and not SEPA. DOE will comply with State regulations, including SEPA, as appropriate.

In accordance with NEPA and the cited regulations for implementation, DOE provided legally adequate notice for the public hearings and conducted the public hearings in accordance with established procedures. Specifically, notice of scheduled public hearings was provided via the means and in the timeframe outlined in governing CEQ and DOE regulations (i.e., 40 CFR 1503.1, 1506.6, and 10 CFR 1021.313, respectively). Based on the feedback from participants in previous public hearings, DOE used a public hearing format according to established procedures in order to facilitate equal participation and representation. The format for the hearings was presented in the Notice of Availability (65 FR 46443 et seq.) for the Draft NI PEIS. As a federal NEPA action, this PEIS is not subject to the Tri-Party Agreement Community Relations Plan (CRP) which

3. The Advanced Test Reactor (ATR) at Idaho National Engineering and Environmental Laboratory (INEEL) could meet projected medical isotope demands, including the same kind of isotopes that FFTF backers claim FFTF would produce for 5 to 10 years even under USDOE's wildly overoptimistic forecasts of medical isotope demand growth.

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4. Using the Advanced Test Reactor to make Plutonium 238 has total startup costs of just $50 million. FFTF startup costs with processing facility start up is $430 million.
* USDOE is only supposed to be basing the decision for restart on Plutonium 238 and nuclear energy research missions _ not commercial medical isotope production.
* USDOE can extend its contract to buy Pu238 from Russian and meet demand from NASA for at least seven years. This is far cheaper than other alternatives for Pu238, but Office of Nuclear Energy made clear they want an American source.
* The PEIS must disclose the technology differences for Pu238 requirements in NASA missions, and what the need would be with currently Congressionally approved and reasonably foreseen missions utilizing the new Sterling space generator after 2004.

1707-12

* At the 5 kg per year production need claimed in the PEIS and by Office of Nuclear Energy _ which drives the size of their facilities and their claim for using FFTF _ Office of Nuclear Energy officials have stated would provide enough Pu238 for NASA to send a new mission into space every 8 months!!! This has never been authorized by Congress and is extremely unlikely _ yet, USDOE is proposing to make a massive capital investment based on meeting this unapproved level of space missions.
* If NASA does not need 5 kg, but only 1 to 3 kg per year, then the Advanced Test Reactor could make both Pu238 and some medical isotopes.

5. The PEIS has two accelerators lumped together in its "accelerator alternative". One is a low energy accelerator, which could make both research and commercial isotopes (but not the neutron rich isotopes that FFTF, or ATR or a high energy accelerator would make). The cost of the low energy accelerator is just $35 million ___ less than one year's cost of keeping FFTF on standby!!!

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primarily has as its focus cleanup decisions under the Tri-Party Agreement. Nevertheless, the public participation process implemented for the PEIS meets or exceeds procedures outlined in the CRP to include provision of a public comment period on the Draft NI PEIS in excess of 45 days.

The PEIS does consider site specific impacts on waste management and treatment facilities. For example, Sections 4.3.1.1.13 and 4.3.3.1.13 of the PEIS assess the impacts of FFTF restart coupled with target fabrication and processing in the 300 Area and in FMEF, respectively. The analysis includes quantification of the impacts of projected waste generation on treatment, storage, and disposal facilities.

1707-7: Current domestic and global producers of radioisotopes include governments that operate reactors and accelerators at national laboratories or institutes, and private sector companies that own and operate accelerators. There are also many partnership arrangements wherein companies lease irradiation space in government reactors or operate processing facilities in coordination with the government. A few universities also produce radioisotopes, but their ability to provide reliable and diverse supplies are generally limited by the small-scale capabilities or operating schedules of their facilities.

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

Although other manufacturers produce medical radioisotopes, DOE remains the key provider for a large number of radioisotopes that are used in relatively small quantities by individual researchers at universities and hospitals. Because their application is initially

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5.2. The cost of USDOE's high energy accelerator in the PEIS is $700 million. USDOE presents the accelerator option as being $1 billion by lumping the two accelerators together and then adding to this another $218 million, which they claim is the cost of shutting down FFTF. Essentially USDOE claims that the cost of shutting down FFTF is a cost of every alternative except for the alternative of restarting FFTF. Under the restart alternative, the cost of shutting down FFTF is never incurred.

1707-13 (Cont'd)

5.3. The USDOE proposed high energy accelerator was sized just to make at least 5kg of Plutonium per year. It could be greatly reduced in size and cost if it was built just for nuclear research and medical isotopes. Under this reasonable alternative, which USDOE must consider, USDOE could buy the Pu238 from Russia or use the ATR reactor for Plutonium 238, while still having a nuclear energy research accelerator. Experts agree that it could do everything for nuclear research that FFTF could do, and do more.

5.4. The PEIS must be changed to include a reasonable range of accelerator alternatives that are mot solely sized to produce 5 kilograms of Pu238 per year. A steady neutron source accelerator in the Northwest, for example, with reduced size would also have greatly reduced operating costs than those presented in the Cost Report, because accelerator operating costs are largely determined by electricity costs. Another reasonable alternative that the Department must discuss and consider are variations on the Department's own proposed Advanced Neutron Source accelerator proposed for Oak Ridge.

1707-14

6. USDOE improperly and illegally excluded from the PEIS consideration of costs and impacts on its clean_up (Environmental Management) budget from disclosed proposed and related actions. By publishing a separate report on costs _ which was not disseminated for public review until after the public hearings were over in the Northwest, USDOE illegally and improperly prevented the public from reviewing and commenting on these issues. The sole cure for this will be disclosure and consideration in one document (the PEIS) of costs and budgetary impacts on the cleanup program, and holding an additional round of hearings and comment opportunities.

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experimental, these isotopes are not generally purchased in large enough quantities to make their production financially attractive to private industry. However, supplies of many research isotopes are not readily available from existing domestic or foreign sources, causing a number of medical research programs to be terminated, deferred, or seriously delayed. See Section 1.2.1 of Volume 1 for more detail.

1707-8: The NI PEIS evaluates the environmental impacts of a range of reasonable alternatives to fulfill the requirements of the proposed action, which includes the production of medical and industrial isotopes, the production of plutonium-238 for future NASA missions, and civilian nuclear research and development. DOE acknowledges that there are other manufacturers of medical radioisotopes, including the University of Missouri and International Isotopes Incorporated which has constructed a linear accelerator from assets purchased from the former Superconducting Super Collider Project), and the domestic production capabilities of these facilities have been considered in the development of the NI PEIS. While some existing facilities may possess the capacity to support production of small quantities of research isotopes, NERAC Subcommittee for Isotope Research and Production Planning Final Report, April 2000, recommends that:

"Plans for acquiring a dedicated radioisotope production reactor should be initiated so that both the cyclotron and reactor radioisotope production facilities will meet the radioisotope needs of the U.S. research community by 2010." The report further states:

"It is important that contingency planning be performed and implemented by Isotope Programs that act to guarantee isotope supplies in the long term. This must include consideration of facility retirement and/or redirection, potentially major changes in the agreements underlying parasitic production, successful consolidation of processing capabilities, and the timing and uncertainties of bringing new, dedicated facilities online."

1707-9: The PEIS fully considers the availability of DOE facilities to meet the proposed action. As stated in Section 1.2.1 of Volume 1, currently, approximately 50 percent of DOE's isotope production capability is

6.2. In the context of this PEIS and the related decisions that the PEIS considers, costs of alternative actions involve the irretrievable commitment of resources, and certain aspects of what USDOE calls "cost" (which are really budget considerations involving tradeoffs in intradepartmental budgets) considerations have direct environmental impacts (including impacts on Hanford Clean_Up and the national Environmental Management Program).
6.3. "irreversible commitment of resources" includes the impacts of using USDOE's limited funding for new production missions on the USDOE's legal obligations to cleanup contamination at Hanford and other facilities. USDOE has officially stated that its limited budget requires it to cap "target" cleanup (Environmental Management, "EM")) budgets through 2006, including Hanford's cleanup budget. USDOE has officially forecast that it will fall over $200 million short in 2002 of the funding required for essential safety work and cleanup under the Hanford Clean_Up Agreement and applicable environmental laws.
6.4. Use of USDOE's limited funding for FFTF startup and use of future Hanford EM budgets for such related actions as storing, treating or disposing of wastes from FFTF and Plutonium processing startup, therefore, has a direct environmental impact on Hanford Clean_Up.
6.5. USDOE has made this a direct impact by agreeing in the 1995 amendments to the Hanford Clean_Up Agreement to shutdown the reactor and use the funds saved from shutdown for cleanup and reducing the so_called cleanup funding "compliance gap". USDOE's own words in 1995 committed the Department to use the funds saved for higher priority environmental management activities. At that time, it was costing the Hanford EM budget $30 million a year to maintain the reactor. USDOE is legally required to consider in the PEIS the environmental benefits from meeting its 1995 commitment to shutdown the FFTF reactor and to use the funds saved for cleanup.
6.6. The PEIS is legally required to consider how the maintenance of the reactor on hot standby for the new proposed missions cost the Hanford cleanup budget at least $30 million a year from fiscal years 1996 through 1998, and the related USDOE decision to ask

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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). Section 2.6.1 has been expanded to included a discussion on the capacity at ATR and HFIR.

The Isotope Production Facility (IPF) at Los Alamos National Laboratory produces radioisotopes using the Los Alamos Neutron Science Center's (LANSCE) half-mile accelerator that delivers medium-energy protons. Among other isotopes, the IPF's three major products include germanium-68, strontium-82, and sodium-22. As a result of changing DOE missions, the production of radioisotopes at target area "A" of the LANSCE has been rendered inoperable. In order to replace the level of production lost due to this change, DOE is completing a new and more efficient IPF that would allow DOE to continue to produce most of these same isotopes in an effort to meet existing demand. As addressed in Section 2.6.1 of the NI PEIS, IPF at LANSCE was considered but dismissed from further evaluation because, although it can be used in tandem with the Brookhaven Linac Isotope Producer (BLIP) located at the Brookhaven National Laboratory to supply near-term isotope requirements, it is not certain that these facilities could accomplish reliable, increased isotope production at the level needed to support projected needs.

1707-10: There currently is little room for growth of medical isotope production at ATR. The neptunium-237 targets for plutonium-238 production will compete for space in the reactor. There are potential negative impacts to the private company that leases reactor space for the production of radioisotopes due to being assigned less desirable irradiation space. If less than 5 kilograms of plutonium-238 production per year are required, the potential for negative impacts to the private company is reduced.

DOE estimates (Section 1.2.2 of Volume 1) that NASA will require between 2 to 5 kilograms of plutonium-238 per year. In response to comments 2.8, 2.9, and 2.11, DOE recognizes that a 5 kilogram per year production rate for plutonium-238 could theoretically yield an SRPS every eight months. However, DOE chose a 5-kilogram per year production rate as an upper bound due to uncertainties in the SRPS

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Congress to directly move $30 million out of the Environmental Management budget and into the Nuclear Energy budget to continue to fund hot standby for the current proposed missions. Enough money was wasted on hot standby of FFTF to pay the full costs of the two years of retrieval of liquid High_Level Nuclear Wastes from Single Shell Tanks that USDOE illegally suspended due to a lack of funding during this same period. This is an example of the direct environmental and health impact of related funding and cost decisions that must be examined in the PEIS. **1707-15 (Cont'd)**

6.7. The presentation of costs in the Cost Report is biased and ludicrous, as described below.

6.8. In the report, every alternative is assigned the cost of shutdown and cleanup of the FFTF reactor _ inflating each of the other alternatives by $218 million. This is nothing more than a transparent attempt to bias the report in favor of FFTF restart. This cost must be removed from those alternatives, since USDOE has a preexisting legal commitment in the Hanford Clean_Up Agreement to shutdown the reactor and use the funds saved (compared to continued standby) for cleanup. If the decision is made to shut FFTF, that legal commitment will automatically effective in the Agreement. The cost of shutdown is not a cost of other alternatives. **1707-16**

6.9. The cost of eventually shutting and decommissioning the FFTF must be added to the cost presented for the FFTF restart alternative. The PEIS must disclose the full life cycle cost of the proposal to restart the reactor _ including the cost to deactivate and clean it up.

6.10. The cost of cleaning up currently uncontaminated facilities (and the environmental impacts from contaminating them), such as FMEF, must be fully disclosed and considered.

6.11. The impact on USDOE's current proposals for accelerated cleanup of Hanford's 300 Area from the proposed operation of the 325, 306 and other contaminated facilities in the 300 must be fully disclosed and considered _ including the additional cost likely to be incurred from continuing to operate these facilities while attempting to cleanup the surrounding area (especially given the fact that these facilities have contributed to, and continue to contribute to, the contamination of the soil, air, sewer lines, and **1707-17**

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technology development requirements for backup units, and variability in the amount that may be needed for each of the units to meet NASA's power requirements.

While DOE can select a combination of alternatives, it does not prevent it from selecting FFTF for restart.

1707-11: A forecast for future demand for medical isotopes and the expected growth rate of medical isotope use during the next 20 years is provided in Section 1.2 of Volume 1. The growth projections were 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. DOE does agree that ATR could meet some selected medical isotope demands for the next 6 to 10 years as described in Section 2.5.3 of the Final PEIS.

1707-12: DOE notes the commentor's comments regarding relative startup costs of the alternatives and the assertion that a decision regarding the restart of FFTF should only be based on plutonium-238 production and nuclear energy research missions. However, the purpose of the NI PEIS is to evaluate the environmental impacts of reasonable alternatives to enhancing DOE's existing nuclear facility infrastructure to support production of isotopes for medical, research, and industrial uses, production of plutonium-238 for use in future NASA space exploration missions, and U.S. nuclear research and development needs for civilian application. The Record of Decision for the PEIS will be based on a number of factors including environmental impacts, public input, costs, nonproliferation impacts, schedules, technical assurance, and other policy and programmatic objectives.

DOE agrees that it could purchase plutonium-238 from Russia to satisfy its responsibility to supply NASA with the necessary fuel to support future space exploration missions. Under the current contract set to expire in 2002, the United States is authorized to purchase up to 40 kilograms of plutonium-238, with the total available for purchase in any one year limited to 10 kilograms. Any purchase

groundwater in the surrounding 300 Area). The impact on the ability to cleanup the 300 Area must be fully disclosed.

6.12. USDOE's proposed "Done in A Decade" Plan for accelerated cleanup of the 300 Area explicitly calls for the cleanup to result in unrestricted public access to the 300 Area _ which would be a high environmental benefit. However, if there are continuing nuclear operations _ as proposed for FFTF restart support missions for buildings such as the 325 and 306 facilities _ then this entire Area can not be released for public access, even if it is successfully remediated. This is unacceptable. USDOE must commit now to close these facilities and clean them up. It is also unacceptable that the Office of Nuclear Energy ignored the USDOE's proposal for cleanup of the 300 Area in this PEIS, and failed to disclose the adverse impact the proposed operations in the 325 and 306 buildings would have on both the goal of unrestricted public access and the cost of cleanup. **1707-17**

6.13. The cost report and PEIS clearly assume that the operation of the 325 and 306 buildings will be subsidized by the Hanford landlord budget _ which is the cleanup (Environmental Management) budget _ at a cost of $11 million per year. This subsidy will harm cleanup, and its impacts must be disclosed or eliminated by adding the full cost of maintaining the facility into the operating costs disclosed for FFTF related operations. **1707-18**

6.14. The Hanford Clean_Up budget already subsidizes the FFTF standby _ documents show that Battelle / Pacific Northwest National Lab agreed to take over the standby at the urging of the Director of the Office of Nuclear Energy, and that Battelle clearly pitched that a benefit would be its ability to use its administrative and overhead accounts to improperly subsidize FFTF standby. We urge the Secretary to have the Inspector General review this and the propriety of other contract related decisions for FFTF standby and proposed operation. **1707-19**

6.15. USDOE's cost report _ even with its overt bias in favor of FFTF restart _ puts the total construction and startup costs for meeting USDOE's claimed demand for research medical isotopes, and some commercial isotope production, with an accelerator at $106.3 million. **1707-20**

beyond what is currently available to the United States would likely require renegotiation of a new contract (including purchase price), and may require additional NEPA review. In addition, for supply reliability reasons and concerns about nuclear nonproliferation, see Section 1.2 of Volume 1 of the PEIS. DOE's preference is to establish a domestic plutonium-238 production capability.

The PEIS states (Section 1.2.2 of Volume 1) that NASA will require between 2 to 5 kilograms of plutonium-238 per year. DOE recognizes that a 5-kilogram per year production rate for plutonium-238 could theoretically yield an SRPS every eight months. However, DOE chose a 5-kilogram per year production rate as an upper bound due to uncertainties in the SRPS technology development requirements for backup units, and variability in the amount that may be needed for each of the units to meet NASA's power requirements. Section 1.2.2 has been revised to reflect these technology differences.

DOE agrees with the comment that the ATR could make both plutonium-238 and some medical isotopes.

1707-13: DOE notes the commentor's observations regarding costs associated with Alternative 3 (Construct New Accelerator[s]). The commentor's observations regarding the costs associated with permanent deactivation of FFTF are correct. FFTF would be permanently deactivated should a decision be made to select any alternative other than Alternative 1, Restart FFTF. The Cost Report is not biased in favor of FFTF. The Cost Report was structured to clearly identify the implementation costs of the various alternatives so the Secretary of Energy would have this information along with other data for consideration. For Alternatives 2 through 5, deactivation of FFTF is part of the implementation cost for these alternatives. In the same manner that HFIR and ATR deactivation costs are not included for Alternative 2, the FFTF deactivation costs are not included in Alternative 1. The Cost Report correctly assigns costs in the alternative evaluations.

1707-14: The commentor is correct in his observation that the proposed high energy accelerator was sized to make at least 5kg of plutonium-238 per year and that it could be greatly reduced in size, cost of construction, and operating costs if the plutonium-238 production mission were not

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Whereas, restarting FFTF and construction and startup of the ancillary mission facilities at Hanford are estimated in the report to cost $423 million (not even adding in shutdown costs for FFTF and cleanup of the FMEF). Operating costs for the accelerator and its processing support would cost $10 million a year less than USDOE wastes on FFTF standby annually now _ and, $2.4 billion less than FFTF over 30 years. (USDOE costs) 6.16. USDOE previously estimated the cost to startup FFTF at $554 million. SEE 4/17/97 Unified Field Budget Request. The difference is inexplicable, although this figure included mission related restart costs, which may have changed slightly with the dropping of the Tritium proposal. USDOE must use its own prior approved budget baselines for this PEIS disclosure of costs.
6.17. The claimed cost of shutdown of FFTF is artificially inflated _ the validated and USDOE approved budget baseline from 4/7/99 reveals a cost of just $152 million to shutdown, and even this must be considered a high estimate that failed to consider the proposal to accelerate shutdown. The 1996 approved baseline budget for shutdown _ before Hanford began jockeying the figures to justify restart _ was just $89 million. SEE RDS No. R95T006 at 7.
6.18. USDOE failed to disclose that it was building a new accelerator at the time this PEIS was released, and its cost was half that disclosed in the cost report. USDOE fails to disclose how this would affect need for other facilities.
6.19. Not one cent is assigned to the costs of storing, treating and disposing of the wastes from FFTF and related mission proposed operations at Hanford, like Plutonium processing.
6.20. In its Tank Waste EIS, USDOE assigned a huge cost for evaporation services, vitrification and ultimate disposal of vitrified waste in Yucca Mountain. NEPA requires disclosure and consistency in the use of costs.

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7. The total cost to the Hanford Clean_Up Budget from the proposed restart and actions at Hanford is likely to exceed $1 billion _ the impacts of adding these costs to the already inadequate Hanford Clean_Up budget must be fully disclosed, along with the cumulative impacts of the costs of Hanford storing, treating, disposing and monitoring wastes from other pending

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pursued and the accelerator were designed and constructed only to support the nuclear research and development and medical and industrial isotope production missions.

The commentor also proposed that DOE consider alternatives in the PEIS combining elements of two or more alternatives. As stated in Volume 1, Section 2.5.4 of the PEIS, DOE can select any alternative or combination of alternatives or elements of alternatives in the Record of Decision associated with this NI PEIS. Alternative 3 is a prime example of an alternative that could be split and combined with an other alternative. The evaluations presented in the NI PEIS are structured to enable the Secretary of Energy to make these types of tradeoffs during the decision process.

The commentor proposed that DOE consider variations to the Advanced Neutron Source at the Oak Ridge National Laboratory (ORNL). The commentor is referring to the Spallation Neutron Source (SNS) facility accelerator presently under construction at ORNL. The SNS is a spallation neutron source facility designed to provide a high-flux, short pulsed neutron source that would give the United States' scientific and industrial research communities a much more intense source of pulsed neutrons than is currently available. As indicated in Table 2-4, SNS was considered and dismissed as a candidate irradiation source to support the NI PEIS missions because the facility's full capacity has been dedicated to support planned mission by the primary user of the facility. Modification of the SNS to accommodate the NI PEIS missions would compromise the ability of the facility to meet the requirements of the SNS planned missions.

1707-15: 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. FFTF restart would not impact the schedule or available funding for existing cleanup activities.

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USDOE decisions, including related decisions by the Office of Nuclear Energy that would add wastes to Hanford's existing burdens.

7.2. The Hanford site currently charges less than 50% of the marginal cost of disposal for newly generated wastes or offsite wastes shipped for disposal, and the Hanford Clean_Up budget picks up all the remaining costs (i.e., the already inadequate Hanford Clean_Up budget pays at least half of the marginal cost of $1046 per cubic meter of Category 1 Low_Level Waste buried in Hanford's Low_Level Burial Grounds). The direct impact of waste additions from non_cleanup work must be fully disclosed, along with the life cycle costs and cumulative impacts from other USDOE proposed waste additions to Hanford.

1707-15 (Cont'd)

7.3. Of course, the environmental impacts (including cumulative risk increase from transport due to related decisions that are pending _ not just the transport increment of actions in covered in this PEIS) of waste additions to Hanford's soil column / vadose zone must be analyzed and disclosed. At this time, because USDOE has refused to follow the advice of its own Hanford Advisory Board to stop the addition of non_cleanup wastes to Hanford's Low_Level Burial Grounds and to investigate the vadose zone and groundwater for potential releases, USDOE can not adequately analyze and disclose the impacts of adding additional Low_Level radioactive wastes to these burial grounds. The same is true for the proposal that the wastes from FFTF and related operations would be disposed at the commercial Low_Level Waste Dump operated on the Hanford Nuclear Reservation pursuant to the Northwest Low_Level Waste Compact. That site is subject to a RCRA release investigation, which is pending and a separate EIS on its continued operation _ a fact that the PEIS and Waste Minimization Plan failed to disclose. The cumulative impacts of all waste additions to Hanford's soil column / vadose zone and total potential load of contaminants reaching groundwater _ whether from the commercial site or the USDOE operated site _ must be considered in this PEIS. The Office of Nuclear Energy illegally attempts to avoid this analysis by claiming a preference (illegal and violative of USDOE policy, including the Department's Offsite Commercial Disposal

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DOE assessed the cumulative impacts of the proposed Hanford alternatives in Section 4.8 by combining the impacts of other present, and reasonably foreseeable Hanford Site activities, including the impacts of waste management.

DOE notes the commentor's concerns regarding the existing cleanup mission at Hanford. Although beyond the scope of this NI PEIS, ongoing activities to remediate existing contamination at Hanford are a high priority to DOE. The Hanford Site environmental restoration activities are conducted in accordance with the Tri-Party Agreement (i.e., Washington State Department of Ecology, U.S. Environmental Protection Agency, and the U.S. Department of Energy). This Agreement specifies milestones and schedules for restoration of all parts of the Hanford Site. A Tri-Party Agreement change was made to place the milestones for FFTF's permanent deactivation in abeyance until the DOE reaches a decision on whether the facility will be used to meet mission needs. Public meetings were held on this formal milestone change. The proposed actions delineated in the PEIS would not have an impact on Hanford cleanup activities. DOE remains committed to the cleanup mission at Hanford.

The Hanford Site funding maintains the burial grounds in a ready to serve configuration. Emplacement costs are borne by the generator. Any waste received in the execution year from offsite generators reduces the Hanford Site allocation to disposal.

Closure costs for the burial grounds are borne by Hanford. As it is unknown what sort of cap will be placed on the burial grounds, there is no detailed estimate to provide.

Forecasted volumes of wastes planned to be received are on the internet at http://www.hanford.gov/docs/ep0918/sw_navil.htm

1707-16: The Cost Report is not biased in favor of FFTF. The Cost Report was structured to clearly identify the implementation costs of the various alternatives so the Secretary of Energy would have this information along with other data for consideration. For Alternatives 2 through 5, deactivation of FFTF is part of the implementation cost for these alternatives. In the same manner that HFIR and ATR

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Policy) for using an undisclosed commercial site for burial. However, the only theoretically legally available site would be right back on the Hanford Nuclear Reservation.
7.4. Pending related decisions that would result in additional burial of wastes in Hanford's soils must be disclosed and the cumulative impacts considered, including long_term impacts on groundwater and the Columbia River. It is not legally adequate to state that Hanford has capacity (as in land area available for disposal) for the wastes that are proposed to be generated by this action(s). The Low_Level Burial Grounds have operated in violation of Washington State's Dangerous Waste laws, illegally burying hazardous wastes barred from land disposal within the past five years. There has been no investigation of the Burial Grounds, which are formally considered to be illegal dangerous waste soil disposal sites that lack liners, vadose zone monitoring, leachate collection systems, etc...
7.5. The PEIS fails to consider cumulative impacts across the board, but especially in regard to related pending actions to import more waste to Hanford and bury or store more wastes at Hanford. The PEIS is required to consider impacts from "actions which have relevant similarities, such as common timing, impacts...media...in the same general location." 40CFR1502.4 (c). All proposals to add non_ Hanford cleanup wastes to Hanford's soil or storage facilities fall into this category of cumulative impacts of related decisions.
7.6. USDOE claims that it has all the money it needs for funding the restart of the FFTF reactor on a fast track, so it does not include continued costs for standby and maintenance (at $40 million per year) over any stretched out period in the costs for restart. However, USDOE claims that because it lacks the money to meet its legal obligation to shutdown FFTF, it will add $80 million to the deactivation costs over two years for continued maintenance _ artificially inflating the cost of shutdown to $218 million.
7.7. The PEIS fails to even disclose chemical or radioactive hazards of projected waste streams. E.g: Not all "Low_Level" wastes are low radioactivity. Many "mixed wastes" are barred from disposal in landfills in Washington (or elsewhere if generated in Washington). The PEIS and Waste Minimization Report fail to disclose how they

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deactivation costs are not included for Alternative 2, the FFTF deactivation costs are not included in Alternative 1. The Cost Report correctly assigns costs in the alternative evaluations.

The commentor's reference to DOE's standing obligations under the Tri-Party Agreement (TPA) is not correct. In October 1997, a tentative agreement was reached among the U.S. EPA, Washington State Department of Ecology, and DOE Richland Operations (DOE RL) to delete the FFTF's M-81 milestones (for both standby and transition activities) from the TPA. This followed the January 1997 decision to place FFTF in standby. This Class I TPA modification was the specific focus of the TPA-required public review and comment period, which ran from November 24, 1997, to February 20, 1998. As a result of comments from the public, the milestones were placed in abeyance (temporary suspension), as opposed to being deleted, until such time as a decision is made by DOE regarding the future of FFTF. In August 1999, DOE-RL, Washington State Department of Ecology, and the U.S. EPA signed Tri-Party Agreement Change No. M-81-98-01 agreeing to the abeyance of FFTF's M-81-00 series milestones. Should the Secretary of Energy decide to return FFTF to operation, the TPA signatories have agreed that the aforementioned milestones will be considered deleted. Should the Secretary of Energy decide to permanently shut down FFTF, the signatories have agreed to either negotiate a new FFTF TPA transition milestone series within 120 days of receipt of DOE RL's proposed changes or allow reinstatement of the M-81 milestones if the 120-day timeframe is not met.

Clean-up cost allocation is addressed in the response to 1707-15.

1707-17: The 300 Area Revitalization Plan provides for continued multi program R&D operations in the 300 Area, including operation of various laboratories, office facilities, and services. It also provides for consolidation (but not complete elimination) of radiological operations, with support for Hanford Site facility transition and environmental restoration efforts. The plan does not require closure of the 325 and 306-E buildings as long as they are needed for active research projects. Operation of these facilities would not violate any existing agreements between DOE and stakeholders or other legal obligations,

would be treated, and where. A site specific EIS will legally be required to follow this PEIS to disclose and consider these types of impacts _ after disclosing the nature of the wastes. In regard to costs, USDOE has totally failed to disclose the waste, required treatments, and disposal sites _ much less disclose in the cost estimate for restarting FFTF what the costs will be from storing, treating and disposing of the wastes from startup of FFTF and Plutonium / isotope processing at Hanford.
8. Processing Plutonium 238 at Hanford (whether at FMEF or elsewhere) does create liquid "high activity waste" that has to be stored in a tank and vitrified _ just like liquid High_Level Nuclear Waste!!! The Office of Nuclear Energy is just calling it something different to try to escape our criticism. The PEIS must fully disclose where, how and when these wastes will be stored, treated and disposed. Incredibly, the PEIS fails to disclose any of this. Nor is it legally adequate to claim it is disclosed in a separate "Waste Minimization Report", which was not available for public review. (in any event it is legally required to disclose this in the one document, the PEIS). The PEIS fails to disclose the following:
8.2. The cumulative impacts from adding any additional high activity or liquid High_Level Nuclear Wastes to Hanford's existing non_compliant tank farm system (including the cumulative risks of waste transfers) must be disclosed 8.3. The cumulative impacts of adding additional high activity or High_Level Nuclear Wastes to the total amount of waste requiring vitrification and long term storage at Hanford (including disclosure of the storage costs, and, if the waste were to be sent to the proposed and inadequately sized Yucca Mountain Repository, the full costs of disposal).
8.4. The illegality of the proposed long_term storage of newly created wastes in tanks in FMEF (see Waste Minimization Plan) with no treatment path, and the improbability of having such storage permitted.
8.5. The environmental impacts of displacing existing wastes in Hanford's High_Level Nuclear Waste tanks from treatment in the vitrification plant, if the newly created wastes are to be treated there.

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nor would it affect ongoing or planned environmental restoration and facility transition activities.

The "Done in a Decade" (http://www.bhi-erc.com/library/doerl/rl9922.pdf) plan addresses the shoreline and 300 Area and is consistent with the 300 Area Revitalization Plan (http://www.hanford.gov/docs rl-2000-62/).

1707-18: The comment is incorrect. If DOE decides to use buildings 325 and 306 for the missions stated in the PEIS, the Office of Nuclear Energy, Science and Technology (NE) would fund the annual operational cost of those facilities, thereby having no impacts on funding for Hanford cleanup.

1707-19: DOE notes with the commentor's view. However, the existing Pacific Northwest National Laboratory (PNNL) contract (DE-AC06-76RL01830, Modification M255) with DOE has a provision C-3.h which states that if the decision is made to restart the FFTF for production and/or testing mission, then startup and future operational responsibilities may be assigned to the Contractor by the DOE, including the direct incorporation of the FFTF facility activities and staff as part of the Laboratory under this Contract. That provision is solely at the discretion of the DOE. At no time did, as the commentor states, Battelle as the operator of PNNL propose or "pitch" "that a benefit would be its ability to use its administrative and overhead accounts to improperly subsidize FFTF standby."

1707-20: The Cost Report is not biased in favor of FFTF. A separate Cost Report was prepared to provide additional pertinent information to the Secretary of Energy so that he may make an informed decision with respect to the range of alternatives presented in the NI PEIS. The information provided in the report is not required by NEPA and CEQ regulations to be included in the NI PEIS. The Cost Report was mailed to interested parties on August 24, 2000 and made available on the NE website (http://www.nuclear.gov) and in the public reading rooms. For information purposes, about 730 people were mailed the Cost Report. DOE has provided a summary of the Cost Report in this Final NI PEIS. These cost estimates are accurate based on currently envisioned needs and contingencies, as appropriate, including those for Alternative 1 options and permanent deactivation of FFTF.

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8.6. The environmental impacts from creation of the new high level nuclear wastes / high activity wastes if Hanford does not have a vitrification plant built and operating within a decade or 15 years, or even a lifetime.

1707-23 (Cont'd)

8.7. The PEIS (and cost report) fail to disclose the cost of disposal of the vitrified waste produced from the operations proposed for FMEF or elsewhere at Hanford which create liquid High_Level Nuclear Wastes / high activity wastes. That cost should be consistent with USDOE's costs used in prior Hanford High_Level Nuclear Waste Tank Waste Remediation System EIS. The prorata cost of building the vitrification capacity and long term storage and monitoring costs must also be disclosed. These add millions of dollars to the cost estimate for FFTF and must be disclosed.

1707-20

9. To avoid our criticism that FFTF and Plutonium and medical isotope production wastes would be harmful to Hanford Clean_Up efforts, Office of Nuclear Energy claims that they will send the wastes to commercial disposal sites, instead of to Hanford. They claimed to be unaware of theDOE's Commercial Waste Disposal Policy, which Senator Wyden, Congressman Smith and the States of Oregon and Washington worked so hard to protect two years ago. That policy saysUSDOE should not send waste to commercial disposal sites except under the most unusual circumstances. The Energy Secretary made strong commitments to Congress regarding this policy being preserved.

* USDOE personnel have also claimed that they could say the wastes would not be stored "at Hanford" because FFTF would not be "at Hanford" any longer if it is restarted. We doubt that this claim will pass the laugh test for the Secretary or for a federal court.

1707-24

10. The PEIS fails to analyze safety in event of accidents or chemical/radiation releases based on actual likely public exposure and actual current conditions, including public access to the areas proposed for nuclear operations.

10.2. E.g: in calculating whether ERPG (emergency guidelines for acceptable levels of public or worker exposure in event of accident) limits will be violated for chemical releases at FMEF, the PEIS assumes that the nearest member of the public is either 4.4 miles or 4.5 miles distant. In fact, USDOE has relaxed access restrictions

1702-25

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DOE assumes that the commentor's reference to new accelerator construction concerns the Isotope Production Facility (IPF) at Los Alamos National Laboratory. This facility produces radioisotopes using the Los Alamos Neutron Science Center's (LANSCE) half-mile accelerator that delivers medium-energy protons. Among other isotopes, the IPF's three major products include germanium-68, strontium-82, and sodium-22. As a result of changing DOE missions, the production of radioisotopes at target area "A" of the LANSCE has been rendered inoperable. In order to replace the level of production lost due to this change, DOE is completing a new and more efficient IPF that would allow DOE to continue to produce most of these same isotopes in an effort to meet existing demand. As addressed in Section 2.6.1 of the NI PEIS, IPF at LANSCE was considered but dismissed from further evaluation because, although it can be used in tandem with the Brookhaven Linac Isotope Producer BLIP) located at the Brookhaven National Laboratory to supply near term isotope requirements, it is unlikely that these facilities could accomplish reliable, increased isotope production at the level needed to support projected needs. Therefore, this facility was considered but dismissed from further evaluation as shown in Table 2-4 of the Draft NI PEIS.

As noted by the commentor, waste management costs were not presented in the Cost Report. Neither NEPA nor the CEQ regulations for implementing NEPA require the inclusion of a cost analysis, including for waste generation. Wastes would be generated by all alternatives and all sites including for the implementation of Alternative 1, Restart FFTF at Hanford, which makes these costs not a particularly useful discriminator among the alternatives considered. Also, the ultimate disposition of some of these wastes in terms of acceptable waste form, disposal site (onsite or offsite commercial, etc.), etc. have yet to be determined. This adds an additional uncertainty to any attempt to quantify waste costs, thus, making any estimates highly presumptive and speculative at best.

The use of proposed alternative facilities associated with reprocessing of neptunium-237 targets would have no impact on schedules or available funding for high-level radioactive waste programs at either Hanford or the INEEL sites. At INEEL the tanks would not be used

and even invites the public to come to the gate of the FFTF reactor, and has even staged bicycle races and public events from the FFTF reactor parking lot. The PEIS fails to disclose and consider the impacts of restricting access back to the site boundary (and the costs of controlling such access now that the site has allowed open, unescorted public access for several years). The public is currently allowed closer than the 500 meters or 2000 meters, at which distance the public would be exposed to chemical releases above what USDOE considers acceptable. However, the PEIS fails to disclose either current actual conditions allowing public access and, therefore, exposure, or disclose that DOE's own risk guidelines would be violated for chemical release accidents deemed to be quite possible.

10.3. Unacceptable levels of public health PEIS at 4_148, 149 and 4_83 harm occur from a postulated nitric oxide release which "reach(es) the level of concern" at 500 meters and 2000 meters, depending on weather.

10.4. The proposed operations in the 300 Area (for 325 and 306) can not meet ERPG guidelines under current or USDOE's officially proposed public access conditions.

10.5. USDOE's calculations for dose are based on unsupportable (and nonexistent plans for) claims that the public will be evacuated and crops interdicted in order to keep doses from drops of FFTF spent fuel assemblies and casks, Plutonium 238 targets or medical isotope targets within USDOE's own overly weak and unprotective guidelines. SEE: "Evaluation of Selected Ex_Reactor Accidents Related to The Tritium and Medical Isotope Production Missions at the Fast Flux Test Facility". The PEIS failed to use available data on frequency of postulated accidents and potential impacts. The PEIS fails to consider the potential for drop or releases from medical isotope targets transported to the 300 Area, where there would be unlimited public access in the Area and along the River.

10.6. Accidents with a likelihood of occurrence as high as one in one hundred per operational year, and a potential for a probability of occurrence as high as 30% over 35 years of operations, include Iodine 125 Target damage, solid waste cask drop, etc.... Neither the consequences for the exposed individuals, or the

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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. The costs for this vitrification facility was included in the cost analysis for this NI PEIS. At Hanford, the existing high-level radioactive waste facilities would also not be used, and as analyzed in the PEIS, no existing or planned high-level radioactive waste facilities would be used to treat the wastes resulting from processing the irradiated targets.

1707-21: 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.

DOE Order 435.1 "Waste Management" gives responsibility to the DOE Field Element Managers to approve exemptions for use of non DOE facilities for the storage, treatment or disposal of DOE radioactive waste based on certain requirements. One of these requirements is that the facility must have the necessary permits, licenses, and approvals for the specific waste.

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frequency, are disclosed in the PEIS. Other potentially devastating accidents include a large sodium spill and burn.
10.7. For many of these accidents, USDOE makes the ridiculous assumption that the "receptor is assumed to be evacuated after 2 hours" _ despite the lack of a track record of notification of accidents by Hanford management, the lack of an evacuation plan adequate to meet the assumption, and the failure to consider that the public includes people far closer than the postulated site boundary. Id at 50.
10.8. The PEIS fails to disclose the extensive accident history at FFTF and the growth in frequency of events caused by unanticipated problems, or "The Procedure was intentionally not used." SEE WHC_SP_0432.
10.9. The PEIS fails to consider and disclose that "severe accidents in FFTF have not been assessed using state of the art methods developed since the reactor began operation. ... (E.g.): uncertainties in post_accident heat removal, in the evolution of fission products from the molten core debris..." National Research Council. National Academy Press, "Safety Issues at the DOE Test and Research Reactors", 1988 at 67. The FSAR, on which PEIS claims are based, was based on oxide fuel, not a metal fuel as used. A hydrogen explosion or long term pressurization "might result in containment rupture" concluded the National Research Council in 1988. As a result, modifications theoretically will vent radioactive gases building up in the reactor _ which is not disclosed.

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11. The proposal for FFTF restart, and alternative one in the PEIS, unconscionably and illegally rely on use of contaminated buildings in Hanford's 300 Area for isotope processing.
11.2. Both the 325 and 306 Buildings are contaminated with Beryllium _ which the PEIS fails to disclose.
11.3. The PEIS must disclose the risks to worker health and safety from starting new, long_term operations in the 325 and 306 buildings.

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11.4. The PEIS fails to disclose that use of the 306 and 325 buildings for commercial isotope vendor support will violate CERCLA requirements that forbid the reuse or lease of facilities to

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As discussed in DOE's "Commercial Disposal Policy Analysis for Low-Level and Mixed Low-Level Wastes" dated March 9, 1999, there are three commercial low-level radioactive waste disposal facilities (i.e., Envirocare of Utah; Barnwell, South Carolina; and US Ecology, Richland, Washington) which are currently operating and licensed to received low-level radioactive waste. Envirocare of Utah also has a permit to receive RCRA hazardous wastes. DOE has and is currently disposing of low-level radioactive waste and mixed low level radioactive waste at Envirocare of Utah and has sent low-level radioactive waste to Barnwell, South Carolina. In June 1995, US Ecology submitted an unsolicited proposal to DOE for the disposal of DOE waste at the US Ecology facility. In November 1995, the State of Washington informed US Ecology and DOE that the State would allow the disposal of DOE waste at the facility subject to certain conditions.

The trenches (i.e., Hanford Site's 200 Area's Low-Level Waste Burial Ground) are regulated by DOE under the Atomic Energy Act of 1954, as amended, and under DOE Order 435.1, Radioactive Waste Management. The 200 Area's Low-Level Burial Ground also contain the following three active permitted mixed waste trenches whereby mixed low-level waste is both stored and disposed of: (1) Trench 31 is a permitted, lined Subtitle C disposal trench that is currently utilized for greater than 90-day storage of mixed low-level radioactive waste; (2) Trench 34 is permitted, lined Subtitle C disposal trench currently utilized for the disposal of mixed low-level radioactive waste that has been treated and is compliant with Land Disposal restrictions; and (3) Trench 94 is a permitted, unlined disposal trench utilized for the disposal of decommissioned naval reactor components. Use of Trench 94 for naval reactor compartments is authorized under a special exemption from the State of Washington Department of Ecology (Ecology). Currently, the Low-Level Burial Ground has a Part A Permit approved by Ecology under the State of Washington Dangerous Waste Regulations, State of Washington Administrative Code (WAC) 173-303, and, as such, is an interim status treatment, storage, and disposal (TSD) unit under the Resource Conservation and Recovery Act (RCRA). The permitted active and future mixed waste units of the Low-Level Burial Ground meet all regulatory requirements of WAC 173-303 and RCRA and will be incorporated into the Hanford Site RCRA Facility

private entities while the facility and area are still contaminated. Pursuant to CERCLA, EPA has a duty to preclude the proposed uses due to their interference with pending CERCLA cleanup of the 300 Area.

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11.5. The contamination in the 325 and 306 Buildings, and their contribution to surrounding contamination, is not disclosed:

* As early as 1979, USDOE documents reveal that USDOE knew that all sewer lines from the 306 building are likely to be contaminated and sources of release to the environment. Continued use of these sewers is not legal or conscionable. The PEIS fails to disclose this contamination.
* Multiple fires and leaks throughout 306 caused contamination levels at 20,000 to 80,000 cpm;
* In 1987, contamination was spread up to 100,000 disintegrations per minute throughout the building;
* There have been repeated instances of windblown contamination outside 306 from unknown sources;
* Sanitary drains and sewers from 325 are suspected to be contamianted with radioactive Mercury and Uranium 235;
* In 1977, Plutonium 238, 239 and 240 were spread outside a glovebox at up to 120,000 dpm;
* Plutonium "inadvertently left in a low level waste collection area" resulted in Plutonium spread of 5 million disintegrations per minute (dpm). Not only does the PEIS fail to disclose this, it fails to analyze the health threats from 35 years of work in these facilities, and the harm to cleanup efforts from continued operations. The PEIS and costs for Alternative one must reveal the costs of this alternative to include new facilities, and reveal their impacts. The PEIS fails to reveal known fire risks, risks of chemical usage, and the fact that if similar accidents have happened before from handling Plutonium or similar chemicals, they must be considered as "likely" to recur.

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The PEIS fails to disclose that other USDOE documents reveal a catastrophic radiation dose from very real risks of fires in the 325 building. USDOE's budget and risk data sheets reveal risks of 91 Rem to onsite persons (which could be the public and children, under USDOE's current 300 Area proposal). This is 670 times

Part B Permit and will operate under final status regulations. In early June 2000, a working draft of the Hanford Site RCRA Facility Part B Permit application was submitted to Ecology.

Cumulative impacts, including waste impacts, are addressed in Section 4.8 of the NI PEIS.

1707-22: The estimates in the Cost Report assume that a decision is made at the end of calendar year 2000 and include the total costs required to restart the FFTF (Alternative 1) and the total costs to permanently deactivate FFTF (Alternatives 2-5). In both cases, implementation of the Record of Decision (ROD) commences immediately after the ROD announcement and continues until the respective objectives are achieved.

1707-23: 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.

Costs are not within the scope of the PEIS. However, costs are considered for the Record of Decision.

The DOE Manual 435.1. Radioactive Waste Management defines high-level radioactive waste as "the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material

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higher than the dose to the public claimed in the PEIS as a maximum for the public from a fire. See Tables 4_28 and 31. Under NRC rules, and even under USDOE's weak guidelines, the calculated dose to onsite persons _which will include the public (although thee PEIS fails to disclose this) _ exceeds allowable limits and the nuclear processing operations proposed for the 306 and 325 buildings would not be allowable.

12. Plutonium 238 processing will involve the same chemical processes _ with an undisclosed risk of explosion and releases _ as the chemical process used previously for Pu239 in Hanford's Plutonium Finishing Plant (PFP) and elsewhere in the USDOE complex and other locations throughout the world.

12.2. This risk includes the risk of explosion (in DOE parlance, self_sustaining exothermic reaction) from chemicals similar to "red oils"; i.e., heating of Plutonium Nitrate solutions mixed with Tri_Butyl Phosphhate, solvents and with impurities present which may serve as an oxidizer. When the risk of such an explosion was first disclosed by Heart of America NW to USDOE regarding the proposed restart of the PFP, USDOE claimed it did not exist _ but later instituted administrative controls, declared an unresolved safety question and admitted the issue had to be fully disclosed and considered in an EIS.

12.3. Pu238 operations will also utilize the chemical hydroxylamine nitrate _ the same chemical that exploded inside PFP in 1997, and blew holes in the roof and caused a relase to the environment which harmed the health of workers. The PEIS fails to disclose this and consider thelikelihood of similar future explosions _ including from Hanford workers' repeated failure to follow safety rules and _ at PFP _ a history of deliberately violating procedures. The likelihood that procedures will be violated at Hanford _ especially so long as USDOE claims FFTF and related processing operations are exempt from external nuclear safety regulation _ must be fully considered. So must the cumulative risks and impacts of ongoing chemical processing and nuclear operations given the site's history and existing problems (i.e._ lack of a sitewide chemical management plan that includes wastes; history of violating Emergency Planning and Community Right to Know requirements).

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derived from such liquid waste that contains fission products in sufficient concentrations; and other highly radioactive material that is determined, consistent with existing law, to require permanent isolation." DOE has prepared an implementation guide to DOE M 435.1 to assist in implementing the requirements contained in that manual. For this particular "requirement," the definition of high-level radioactive waste, the guide is intended to facilitate the classification of indefinite waste as to whether or not they are high-level radioactive waste. It is recognized that the definition of high-level radioactive waste is not precise and is essentially a source-based definition that also alludes to concentrations of a given waste stream. Page II-8 of this guide notes that "For the purpose of managing high level waste under DOE M 435.1-1 [sic], spent nuclear fuel includes spent driver elements and/or irradiated target elements that contain transuranium elements." This statement was included in the guide because the concentrations of long-lived isotopes are likely to be somewhat high during reprocessing and it also meets the source based definition. As a result of reviewing this guide and to address the comments raised, DOE is considering whether the waste from processing of irradiated neptunium-237 targets should be classified as high-level radioactive waste and not transuranic waste. As a result, the Waste Management sections (i.e., Sections 4.3.1.1.13; 4.3.2.1.13; 4.3.3.1.13; and 4.4.3.1.13) of this NI PEIS have been revised to reflect this different classification from what was assumed in the draft NI PEIS. As discussed in these revised sections, irrespective of how the waste is classified (i.e., transuranic or high-level radioactive waste), the composition and characteristics are the same and the waste management (i.e., treatment and onsite storage) for this NI PEIS would be the same. In addition, even if the waste is managed as high-level radioactive waste it would have no impact on the existing high-level radioactive waste management infrastructure (e.g., high-level waste storage tanks), since the high-activity waste from processing of the targets would be initially stored and vitrified within the processing facility (i.e., FMEF, REDC, or FDPF).

1707-24: In accordance with DOE Order 435.1, "Waste Management," 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. If DOE capabilities are not practical or cost effective, exemptions may be approved to allow use

13. USDOE has failed to consider the reasonable alternative of honoring its own commitment to have operation of the FFTF reactor and related nuclear processing operations subject to independent, external nuclear safety regulation and licensing by the Nuclear Regulatory Commission. In 1996, the Secretary of Energy committed to Congress, in a highly publicized statement, that within five years all nuclear energy research facilities of the Department would be fully subject to such regulation. She used the word "commit". **1707-30**

13.2. The PEIS must disclose the difference in standards that would be applied, and processes used, if USDOE honored its commitment to have FFTF and related processing operations subject to external regulation. The environmental benefits of external regulation were noted by the Secretary, and USDOE can not claim now that this is either an unreasonable alternative or that there are no significant differences between its continued use of its own standards and self_oversight and the standards and regulatory oversight of the NRC.

Failure to cure these massive deficiencies will inevitably result in legal action if the Department chooses to pursue restart of the FFTF reactor. **1707-31**

The deficiencies in disclosure in this PEIS will require a site specific EIS to be conducted, if USDOE pursues restart of FFTF and Plutonium / iosotpe processing at Hanford. A site specific EIS will be needed to disclose where USDOE _ and how _ plans to treat, store and dispose of wastes. Similarly, a site specific EIS is necessary to disclose the risks from using the proposed contaminated facilities, and the cumulative impacts on the region and on Hanford Clean_Up from FFTF restart. Of course the claims for costs and timeline of restart fail to include the $40 million per year from additional years of study (and from a successful challenge of this PEIS as well). USDOE should close FFTF and honor its commitment to use the funds saved from shutdown of FFTF for Hanford Celan_Up. **1707-32** **1707-33** **1707-15**

of non-DOE facilities for the storage, treatment, or disposal of DOE radioactive waste. DOE Order 435.1 gives responsibility to the DOE Field Element Managers to approve exemptions for use of non-DOE facilities for the storage, treatment or disposal of DOE radioactive waste based on certain requirements. 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.
DOE has no plans to disassociate the FFTF from the Hanford Site.

1707-25: The accident analysis presented in the NI PEIS provides a basis for making comparisons between the consequences and risks of accidents associated with facilities identified in each of the alternatives and options presented in the NI PEIS. The accident analysis evaluated the consequences and risks to maximally exposed individuals, both workers and members of the public, during postulated accident scenarios. It would not be necessary to conduct further analyses to determine the specific consequences and risks to an individual member of the public located closer to the source of an accident than that already evaluated in the NI PEIS. Any individual member of the public located in close proximity, regardless of distance, would be expected to experience consequences of a postulated accident that are more severe than the consequences to the general public. In fact, the closer an individual gets to the accident the more severe the consequence. However, the probability that a member of the public would be in close proximity to the facility would be relatively low and the associated risk to that individual would be bounded by the MEI risk.

The NI PEIS evaluates potential health effects, in terms of risks and consequences, resulting from a complete spectrum of accidents for FFTF, RPL/306E, and FMEF. The spectrum of radiological and hazardous accidents considered for the NI PEIS includes irradiation and processing facility related accidents, including accidents related to medical isotope target damage, cask drops, and processing accidents. Accident frequencies were derived from current sources, including the current FFTF Final Safety Analysis Report and RPL Safety Analysis Report. The consequences and risks to the maximally

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Notes: a)Proposals referenced orally or in the Waste Minimization Plan to utilize commercial disposal sites (sites which were, improperly, not disclosed) for disposal of FFTF and Plutonium / Isotope processing wastes generated at Hanford violate USDOE's own "Requirement on Use of Non_DOE Facilities for Low_Level Waste and Mixed Low_Level Waste"; 64 FR 12161. "DOE will continue its policy of disposing its LLW and MLLW at the site at which it is generated... or...at another DOE disposal facility." None of the impacts of violating this policy were considered in the Draft PEIS _ nor was the existence of the Policy revealed. Impacts of violating the policy. The cumulative impact of the equivalent of two additional years of operation of either the USDOE Low_Level Burial Grounds or the commercial site at Hanford is significant and must be fully disclosed and analyzed. The 5,000 cubic meters of additional Low_Level Waste that the proposals would generate at Hanford are roughly equivalent to the full continued operation of either of these two dumpsites for an additional two years. b) Safety: PEIS repeatedly references GENII, 1988, for source of dose calculations. However, USDOE declared Unusual Occurrence in 1989 when it was discovered that the software had wind directions off by 180 degrees _resulting in dose calculations off by a factor of two. If 1988 version was relied upon, all dose calculations must be redone. In any event, they must be redone with appropriate exposure scenarios for public.

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Note to USDOE for the official record: This version of our comments replaces the version mailed by USPO on September 15, 2000. Please utilize the attachments that were mailed with that set of comments.

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exposed individual, surrounding population, non-involved worker, and involved worker are presented in Sections 4.3.1.1.10 and I.1.7 of the NI PEIS.

All of the proposed medical isotope targets were screened for each postulated accident to determine which isotope would result in the highest consequences. The I-125 target resulted in the highest consequences during a postulated fire accident at a processing facility The I-125 fire analysis is presented in Section I.

The FFTF, RPL/306E, and FMEF accident analyses in the NI PEIS conservatively assumed no evacuation of the surrounding population. Individual members of the public located onsite concurrent with a postulated accident were assumed to be exposed to the hazardous release for up to two hours. The analyses did assume that crops and foods would be condemned or interdicted in accordance with EPA Protective Action Guides. The potential for drops or releases from spent fuel assemblies, plutonium-238 targets, and medical isotope targets transported within the Hanford Site are addressed in Section J 5.3 of the NI PEIS.

The FFTF operated safely from 1982 until 1990 when it was placed in standby. There have been no serious nuclear-related accidents or accidental releases of hazardous or radioactive materials at FFTF during its lifetime. Section 3.4.9.4 of the NI PEIS has been updated to provide information specific to FFTF's accident history.

The methodologies used for the respective accident analyses were developed to model the radiological consequences of nuclear facility accidents and are considered applicable to the analysis of accidents associated with the production of plutonium-238 and other proposed isotopes. The severe reactor accident in the NI PEIS is based on the most current available information. The reactor fuels (MOX and HEU) proposed for the FFTF are oxide forms. If a decision is made to restart FFTF, the status and condition of all safety systems will be assessed and appropriate actions taken, as necessary, prior to startup. This includes updating the Final Safety Analysis Report and completing a Probabilistic Risk Analysis using state-of-the art methodologies.

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1707-26: There was no proposal to restart FFTF in the Draft NI PEIS. Alternative 1, Restart FFTF, is one of a range of reasonable alternatives evaluated for environmental impacts and for accomplishing the objectives described in Section 1.2 of Volume 1. At the time that the Draft NI PEIS was published, no preferred alternative had been selected. None of the alternatives examined in the NI PEIS is illegal or would require illegal activities.

Use of the 306 and 325 facilities for the PEIS missions would be consistent with their historical and planned uses at Hanford. The facilities were designed and constructed for the types of activities that would be conducted there if they were chosen to implement the PEIS missions. Buildings 325 and 306-E are currently used for activities that are not associated with the nuclear infrastructure alternatives described in Section 2.5 of Volume 1. According to the Hanford Beryllium Fact Sheet (www.hanford.gov/safety/beryllium/fctsheet 306-e.htm) Building 306-E contains beryllium in Rooms 165 and 180 including the interior of the exhaust ducts that service these rooms, and the interior of the beryllium wire/component storage cabinet in Bay 2. But surveys conducted in 1999 showed levels were below method detection limits. In Building 325, the risk of beryllium exposure has been identified as low. Small risks are associated with work activities that would expose interior areas of older ductwork that may have residual beryllium contamination (Hanford Beryllium Fact Sheet -www.hanford.gov/safety/beryllium/fctsheet/325.htm). The PEIS missions would not be expected to result in worker exposures to beryllium, although some areas of the facilities contain residual beryllium contamination. If work in contaminated areas of the facilities were necessary, appropriate protective measures would be used to prevent worker exposures.

Worker safety (radiological protection) is a key element of the DOE's Radiological Health and Safety Policy (DOE P 441.1, April 26 1996) This policy states in part that DOE facilities must "conduct radiological operations in a manner that controls the spread of radioactive materials and reduces exposure to the workforce and the general public and that utilizes a process that seeks exposure levels as low as reasonably achievable." Each DOE site, including Hanford, is required to implement a radiological control program with the intent to

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meet this policy goal. Based on the assessment of worker health impacts for all of the alternatives and options presented in the NI PEIS that make use of facilities in the 300 Area at Hanford, the most likely impact of the use of these facilities is no increase in cancer fatalities among the facility workers. This assessment is based on operational data collected at the facilities during recent operation. For example in Alternative 1, Option 1, target irradiation and processing occur FFTF and the RPL. As shown in Section 4.3.1.19 of the PEIS, no fatal cancers would be expected to result from implementation of the alternative.

1707-27: The 300 Area Revitalization Plan, which can be found at http://www bhi-erc.com/library/doerl/rl99-22.pdf, provides for continued multi program R&D operations in the 300 Area, including operation of various laboratories, office facilities, and services. It also provides for consolidation (but not complete elimination) of radiological operations, with support for Hanford Site facility transition and environmental restoration efforts. The plan does not require closure of the 325 and 306-E buildings as long as they are needed for active research projects. Operation of these facilities would not violate any existing agreements between DOE and stakeholders or other legal obligations, nor would it affect ongoing or planned environmental restoration and facility transition activities.

If work is planned for any of the contaminated areas (chemical or radiological) in these facilities, the area would be cleaned up or work would be conducted with appropriate protective measures in place (e.g., protective clothing, respiratory protection, administrative controls). In any case, the planned activities would comply with all regulatory standards for exposure of workers to hazardous or radioactive materials.

The NI PEIS evaluates occupational and public health and safety for the proposed activities during routine operations, accidents, and transportation for each of the alternatives (e.g., Sections 4.3.1.1.9, 4.3.1.1.10, and 4.3.1.1.11 for the FFTF restart alternative, Option 1).

1707-28: It is difficult to address the commentor's concerns as no specific citations were provided. Volume 1, Chapter 3 (Section 3.4.9.4) provides information regarding the accident history at Hanford. This

discussion specifically identifies events that have occurred more recently than those brought forth in this comment. Specific documentation of the alleged contamination events could not be found after a review of DOE records dating back to 1973. However, records of similar events were reviewed and, in all cases, the contaminated areas were cleaned and there was no indication of significant contamination of staff working in or near these areas. The current impact of these earlier events would be seen in the site data collected for the site environmental reports, both for exposure to the public and for worker exposure. Information from the Hanford Site Environmental Report for 1998 and the Occupational Radiation Exposure, 1998 Report (DOE/EH-0608) has been presented in Chapter 3 for the Hanford site.

This PEIS has provided an estimate of the incremental potential human health impacts associated with each of the alternatives proposed (including the use of Area 300 facilities) for the production of isotopes for medical uses and research and development. The methodology used is intended to provide realistic results based upon our current knowledge of the health impact of low doses of radiation. In all cases, the analysis shows that the most likely impacts from the use of the Area 300 facilities are no additional cancer fatalities among the population surrounding the Hanford facilities. [See for example Section 4.3.1.1.9 and 4.3.2.1.9 and the summary Tables in chapter 2 of Volume 1 of the NI PEIS.]

Worker safety (radiological protection) is a key element of the DOE's Radiological Health and Safety Policy (DOE P 441.1, April 26, 1996) This policy states in part that DOE facilities must "conduct radiological operations in a manner that controls the spread of radioactive materials and reduces exposure to the workforce and the general public and that utilizes a process that seeks exposure levels as low as reasonably achievable." Each DOE site, including Hanford, is required to implement a radiological control program with the intent to meet this policy goal. Based on the assessment of worker health impacts for all of the alternatives and options that make use of Hanford facilities, the most likely impact of the use of these facilities is no increase in cancer fatalities among the facility workers. For example in Alternative 1 option 1, all of the activities (target irradiation and

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processing) occur at Hanford facilities, including Area 300 facilities. As shown in Sections 4.3.1.1.9 and 4.3.2.1.9, the expected consequences are less than one additional fatal cancer among the workforce; that is, no additional fatal cancers are expected.

The NI PEIS also provides information regarding 300 Area (and Hanford) water resources (i.e., surface water, process sewer system, groundwater) and the potential impacts from the proposed activities in sections 3.4.4. and 4.3.1.1.4, respectively. As discussed, there would be little or no measurable increase in water use to support target fabrication and processing in 300 Area, negligible changes in the quantity or quality of process and sanitary wastewater, and no radiological liquid effluent to the environment under normal operations More specifically, operations at RPL would result in an increase of less than 1 percent in process waste waster discharge and this would be from equipment washing of nonradiological target materials. Additionally, building 306-E would not provide support to NI PEIS activities involving radiological materials.

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.

1707-29: The NI PEIS considered plutonium-238, neptunium-237, medical isotopes, and all hazardous chemicals during processing and irradiation to arrive at a set of accidents whose risks and consequences bound the potential public and worker health and safety impacts of all potential accidents. The resulting risks and consequences for a currently operating processing facility, such as RPL, pertain to the proposed action and do not include the risks and consequences from non-infrastructure missions. Section I.1.4.2.1 specifically addresses previous fires at the Hanford Site.

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DOE notes the commentor's concern for potential explosions and release of materials. The solvent extraction process involving the use of tributyl phosphate in hydrocarbon to separate and produce plutonium nitrate solution has been used extensively for years in the United States as well as in Japan, England, Germany, etc. Under a combination of off-normal conditions, there can be a reaction between nitric acid or nitrates and tributyl phosphate degradation products at higher than normal operating temperatures. Such a reaction could only occur in a heated evaporator or concentrator if there is excess tributyl phosphate impurity or residual in the plutonium nitrate liquid. This scenario will be analyzed as a potential design basis accident in developing the safety authorization basis and associated technical safety requirements for the chemical processing option chosen by DOE.

1707-30: On February 19, 1999, Secretary Bill Richardson sent a letter to the Senator John Warner, Chairman of the Committee on Armed Services to inform him of DOE's efforts in exploring a potential move toward the external regulation of DOE's nuclear facilities. Secretary Richardson reported that, based on DOE's analysis, many of the potential benefits that were expected from external regulation had not been demonstrated, and appear to be outweighed by associated costs and difficulties raised in the pilot projects. As a result, DOE had determined that submittal of legislation to exempt certain facilities from Departmental regulations was premature. It should be noted that FFTF meets all safety requirements established by DOE and that the DOE requirements are consistent with those established and applied by other regulatory agencies such as the Nuclear Regulatory Commission.

1707-31: DOE notes the commentor's opposition to the restart of FFTF. DOE, as required by NEPA, CEQ and DOE Regulations, has fully described the environmental impacts associated with the alternatives described in Section 2.5 of Volume 1.

1707-32: A site-specific EIS would not be required should Alternative 1 Restart FFTF) be selected in the Record of Decision. This NI PEIS presents a thorough analysis of site-specific information on the environmental conditions prevailing at Hanford, that could potentially

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Response to Commentor No. 1707

affect or be affected by the proposed actions, to include a comprehensive analysis of the associated environmental and health risks of implementing the proposed actions. Specifically, Chapter 4 of the NI PEIS discusses the proposed treatment, storage, and disposal of all wastes generated from the use of proposed Hanford facilities including FFTF (Sections 4.3.1.1.13 and 4.3.3.1.13); the public and occupational health risks from normal operations and postulated accidents associated with use of Hanford facilities (4.3.1.1.9, 4.3.1.1.10, 4.3.3.1.9, 4.3.3.1.10); and the cumulative impacts of waste management activities at the Hanford Site (Section 4.8.3.4). In compliance with NEPA, DOE analyzed each environmental resource area in a consistent, unbiased manner across all the alternatives to allow for a fair comparison among the various alternatives and among the candidate sites. The NI PEIS also considers previous NEPA analyses that bear on the decisions to be made including the Environmental Assessment for FFTF shutdown. No fundamental factors relating to purpose and need, the alternatives under consideration, or the associated environmental impact analyses have changed relative to the decisions to be made since the Draft NI PEIS was published. Therefore, all of the environmental information relevant to expanding civilian nuclear energy research and development and isotope production missions in the United States has been acquired and analyzed in the NI PEIS. The Cost Report did not include $40 million per year for additional years of study because if FFTF restart is selected, implementation would be immediate.

1707-33: DOE notes the commentor's support for Alternative 5, Permanently Deactivate FFTF.

1707-34: On March 11, 1999 (64 FR 12161), DOE announced its decision to continue "its current policy of relying on DOE waste disposal facilities and of using commercial (non-DOE) facilities by exemption when DOE disposal is not practical."

In accordance with DOE Order 435.1, "Waste Management," 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. If DOE capabilities are not practical or cost effective, exemptions may be approved to allow use of non-DOE facilities for the storage, treatment, or disposal of DOE radioactive waste. DOE Order 435.1 gives responsibility to the DOE

Field Element Managers to approve exemptions for use of non-DOE facilities for the storage, treatment or disposal of DOE radioactive waste based on certain requirements. Section 4.3 of Volume 1 has been revised to clarify DOE's position on waste disposal.

Section 4.8 of the NI PEIS provides information on the cumulative impacts, including the cumulative amounts of waste generated at Hanford. This information has been revised from the draft to include capacities for the treatment, storage and disposal facilities at the Hanford Site. In reviewing this information, the cumulative waste generation for low-level radioactive waste is (existing site activities plus nuclear infrastructure) about 100,681 cubic meters over the 35 year nuclear infrastructure operations and low-level radioactive waste disposal capacity at Hanford is about 1,970,000 cubic meters.

1707-35: The 1988 reference to the GENII code is a reference to the documentation associated with the code, i.e., the code description and user's manual. The version of the code used in the analysis is Version 1.485 dated December 1990.

The appropriate exposure scenarios were used in the analysis of normal operation impacts. As stated in Appendix H, the plume exposure data is that recommended by the NRC in Reg Guide 1.109.