SECTION 3
PUBLIC COMMENTS AND DOE RESPONSES

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This section presents a side-by-side display of the comments received by DOE during the public comment period on the *Draft TC & WM EIS* and the DOE response to each comment. Letters have been reproduced as they were received. To find a specific commentor or comment in the following pages, search the Index of Public Officials and Interest Groups or the List of Commentors that follows the Table of Contents to identify the page numbers on which the comments and DOE responses appear. In many cases, individual commentors submitted similar comments on a particular subject. DOE's responses to similar comments are the same.

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Commentor No. 1: Martin Bensky

From: Martin Bensky [mbensky@msn.com]
Sent: Monday, October 26, 2009 7:10 PM
To: tc&wmeis@saic.com
Cc: Alan Waltar; Darrell Fisher; Gary Troyer; Gerry Woodcock; Mike Fox; Wanda Munn; Tony Brooks; Ralph Johnson; John Boland; Fred Mann; Abe vLuik
Subject: Radiologic Risk

Perusing the TC&WM EIS, I am unable to judge whether the results shown in Figs. S-15 through S-22 are credible or not since I am not told what magnitude of radiation dose is related to the stated risk. Most knowledgeable scientists have long since rejected the Linear/No Threshold (LNT) Hypothesis since it has found no supporting data, and abundant conflicting data, in the 60 or so years since the hypothesis was proposed. If this hypothesis was used as the basis for estimating the indicated risk, I strongly object to its use. Of great importance to selection of a closure mode is the fact that, based on your data and my estimate of logical adjustments to your use of the LNT, realistic relationships between dose and incidence of cancer would result in the selection of no-action as the logical choice in every instance. This, of course, has enormous impact on the cost of tank closure and waste management. *1-1* *1-2* *1-3*

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1-1 Regarding the application of the Linear/No Threshold model, risk coefficients used in this *TC & WM EIS* are those recommended in Federal Guidance Report No. 13, *Cancer Risk Coefficients for Environmental Exposure to Radionuclides*, and that report employs the Linear/No Threshold model. In the report, the EPA notes that several expert panels have concluded that the Linear/No Threshold model is sufficiently consistent with current information on carcinogenic effects of radiation that its use is scientifically justifiable for the purpose of estimating risks from low-dose radiation.

1-2 DOE believes that long-term actions are required to permanently reduce the risk to human health and the environment posed by the waste in the tank systems.

1-3 DOE agrees that any path forward on tank closure and waste management will have substantial cost implications. The Summary, Section S.6, and Chapter 2, Section 2.11, of this *TC & WM EIS* summarize and compare the relative costs of the alternatives. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Commentor No. 2: Jeanne Raymond

From: Jeanne Raymond [raymondj@peak.org]
Sent: Monday, October 26, 2009 8:05 PM
To: tc&wmeis@saic.com
Subject: Closure of Hanford to all radioactive waste

DOE and interested parties,

As was agreed between Washington, Oregon, and the United States, Hanford should be cleaned and shut down permanently. No wastes should be coming into Hanford. Once the cleanup of past storage, spills, and waste left on the Hanford reservation, the site must be closed to future importation. Shut Down Hanford Forever. There must be no more threat to the Columbia River, upstream or downstream, upwind or downwind. *2-1* *2-2* *2-3*

Must we restate what has already been established? There should be no disposal of new radioactive wastes at Hanford. Protect the water, air, and soil, as was expected and agreed to by the three parties. *2-4* *2-5*

Sincerely,
Jeanne Raymond
Corvallis, OR
raymondj@peak.org

This is a message from the Department of Energy

DRAFT HANFORD TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT AVAILABLE FOR PUBLIC REVIEW

The U.S. Department of Energy (DOE) today announced that the Draft Tank Closure and Waste Management Environmental Impact Statement (EIS) for the Hanford Site has been filed with the Environmental Protection Agency, and the Agency's Notice of Availability of the EIS is expected to appear in the Federal Register on October 30, 2009. This will initiate a public comment period extending to March 19, 2010. The Washington State Department of Ecology is a cooperating agency on the Draft EIS.

The National Environmental Policy Act and its implementing regulations require federal agencies to integrate environmental values into their decision-making process by considering the environmental impacts of their proposed actions and reasonable alternatives for implementing those actions. This Draft EIS analyzes alternatives for three types of actions: retrieving, and managing waste from 177 underground storage tanks at Hanford and closure of the single-shell tanks (SST); decommissioning of the Fast Flux Test Facility and its auxiliary facilities; and

2-1 Comment noted.

2-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

2-3 Comment noted.

2-4 See response to comment 2-2 for a discussion on the transport and disposal of offsite waste.

2-5 The purpose of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Commentor No. 2 (cont'd): Jeanne Raymond

continued and expanded solid waste management operations on site, including the disposal of Hanford's low-level radioactive waste (LLW) and mixed low-level radioactive waste (MLLW) and limited volumes of LLW and MLLW from other DOE sites in an Integrated Disposal Facility at Hanford.

The Draft EIS includes several preferred alternatives for the actions analyzed, including:

Disposal of Hanford's LLW and MLLW onsite and deferral of the importation of offsite waste to Hanford at least until the Waste Treatment Plant is operational, consistent with DOE's proposed Settlement Agreement with the State of Washington; Retrieving waste from the 149 SSTs consistent with the Tri-Party Agreement and landfill closure of the tanks; The down-selection of a range of treatment alternatives that will provide for chemical separations and supplemental low-activity waste treatment capability; and Entombment of the Fast Flux Test Facility at Hanford, with some special case waste going to DOE's Idaho National Laboratory for treatment and return to Hanford for disposal.

The Hanford Site is located in southeastern Washington State along the Columbia River, and is approximately 586 square miles in size. From early 1940 through 1980's Hanford's mission included defense-related nuclear research, development, and weapons production. DOE's mission now is focused on the environmental cleanup of the Hanford Site.

Additional information about the Draft Tank Closure and Waste Management EIS can be found at

http://www.hanford.gov/orp/?page=146&parent=0. Information about the ongoing cleanup mission at the Hanford Site can be found at http://www.hanford.gov.

DOE will hold public hearings on the Draft EIS in Washington State, Oregon, Idaho and New Mexico during the public comment period and will announce dates, times and locations for the public hearings in the

Federal Register and in local news media at a later date. DOE will accept written and oral comments at the public hearings.

Written comments on the Draft EIS can also be mailed to Mary Beth Burandt, EIS Document Manager, DOE Draft TC&WM EIS Comments, Office of River Protection, P.O. Box 1178, Richland, Washington 99352. Comments can also be submitted via email at TC&WMEIS@saic.com, or by faxing to (1-888) 785-2865. In preparing the Final EIS, DOE will consider all comments received or postmarked by March 19, 2010 and will consider comments received after that date to the extent practicable.

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Commentor No. 3: Martin Bensky

From: Martin Bensky [mbensky@msn.com]
Sent: Tuesday, October 27, 2009 2:44 PM
To: tc&wmeis@saic.com
Cc: Alan Waltar; Darrell Fisher; Gary Troyer; Gerry Woodcock; John Boland; Mike Fox; Wanda Munn; Tony Brooks; Ralph Johnson
Subject: Comment

In view of the enormous expenditure of public funds needed to implement the selected courses of action, I believe the following questions should be answered:

How much cancer will be prevented by refusing to bring outside waste into Hanford for burial?

How much cancer will be prevented by retrieving 99% of waste rather than a much less challenging amount from Hanford tanks? *3-1*

Is there any basis other than response to public outcry from anti-nuclear activist groups for decisions that are irresponsibly extravagant? *3-2*

The U.S. Department of Energy conducted a risk assessment that clearly demonstrated that the modest risk to a nearby resident at some future time was overwhelmingly due to waste that had already leaked from the tanks. The contribution to risk from a tank suitably grouted with appropriate, inexpensive materials was negligible. A rational assessment of the analytical results would indicate clearly that retrieval and vitrification of tank waste is not warranted by any sensible cost/benefit criteria. *3-3*

I believe that no-action is the appropriate course of action for several activities for which very expensive, potentially hazardous courses of action have been selected. Worker safety has clearly not been considered in the decision-making process. Use of public money for waste management demands that real risk, not perceived risk, should be the basis for choosing courses of action. *3-4*

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3-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Please see Appendix D of this *TC & WM EIS* for a detailed discussion of waste retrieval.

3-2 Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*. Waste Management Alternatives 2 and 3 include disposal of offsite waste as part of the analysis. For more information on cancer risk associated with these Tank Closure and Waste Management alternatives, please see Chapter 5, Sections 5.1.2 and 5.3.2, and Appendix Q, Section Q.3, of this EIS.

3-3 The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedule commitments, including tank waste retrieval and vitrification milestones. As described in Chapter 2, Section 2.10, of this *TC & WM EIS*, retrieving and vitrifying tank waste would reduce long-term impacts on groundwater and human health. The importance of these-long term impacts is discussed at length in Chapter 5. Further, Chapter 2, Section 2.11, of this EIS summarizes and compares the relative costs of the alternatives, including the No Action Alternative for tank closure.

See response to comment 3-2 for a discussion of DOE's decisionmaking process.

3-4 Worker safety has been analyzed in the public and occupational health and safety sections throughout this EIS. This analysis will be considered, along with other environmental, technical, and economic factors, in DOE's decisions, which will be discussed in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Commentor No. 4: Mike Fox

From: Mike Fox [mike@foxreport.org]
Sent: Tuesday, October 27, 2009 3:07 PM
To: Martin Bensky; tc&wmeis@saic.com
Cc: Alan Waltar; Darrell Fisher; Gary Troyer; Gerry Woodcock; John Boland; Wanda Munn; Tony Brooks; Ralph Johnson
Subject: Re: Comment

Marty:

Those are some good questions. From our world of risk assessment and management we should also be asking:

1. What will be the estimated costs of saving a life (in dollars spent per life saved) around Hanford as a result of this multi-billion dollar safety activity and safety expenditures? Some estimates of the total are now more than $50 billion. *4-1*

2. How does this estimate compare with other state sponsored safety programs, (highway safety, home smoke detectors, school safety, street safety, etc.), as measured by the same factor, dollars spent per life saved. *4-2*

3. Can we make a list of such risks to the citizens of the state, and list the dollars spent per life saved for each risk, in descending order

4. I contend that the Washington State Health Department have their safety programs funded inversely to the actual harm being done in these activities.

5. We do know there are more than 40,000 deaths per year in the State, a nominal 8000 of them cancer deaths. There are statistically significant excesses of several types of cancer in King County, but the causes of these deaths are not related to Hanford activities and thus are somehow less dead and more acceptable than those who are. *4-3*

6. We need some answers from the state.

Mike

4-1 This *TC & WM EIS* analyzes potential impacts associated with DOE's proposed actions and alternatives to safely retrieve, treat, and dispose of Hanford tank waste; decommission FFTF; and upgrade/expand waste disposal capacity at Hanford to provide for disposal of on- and offsite DOE waste. Chapter 2, Section 2.11, of this EIS also summarizes and compares the relative estimated costs of the alternatives. However, any estimate of dollars spent per potential life saved would be highly speculative and is considered beyond the scope of this EIS. Decisions made by DOE on the proposed actions will be based on relevant factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations.

4-2 Costs of state-sponsored safety programs are out of scope (not included) in NEPA EISs and are, therefore, not analyzed in this *TC & WM EIS*.

4-3 This *TC & WM EIS* includes analyses of potential human health risks associated with the proposed actions and alternatives to retrieve, treat, and dispose of Hanford tank waste; decommission FFTF; and expand waste disposal capacity at Hanford to provide for disposal of on- and offsite DOE waste. Cancer mortalities that are not directly, indirectly, or cumulatively attributable to Hanford activities are beyond the scope of this EIS.

Commentor No. 4 (cont'd): Mike Fox

----- Original Message -----

From: Martin Bensky [mbensky@msn.com]
Sent: Tuesday, October 27, 2009 2:44 PM
To: tc&wmeis@saic.com
Cc: Alan Waltar; Darrell Fisher; Gary Troyer; Gerry Woodcock; John Boland; Mike Fox; Wanda Munn; Tony Brooks; Ralph Johnson
Subject: Comment

In view of the enormous expenditure of public funds needed to implement the selected courses of action, I believe the following questions should be answered:

How much cancer will be prevented by refusing to bring outside waste into Hanford for burial?

How much cancer will be prevented by retrieving 99% of waste rather than a much less challenging amount from Hanford tanks?

Is there any basis other than response to public outcry from anti-nuclear activist groups for decisions that are irresponsibly extravagant?

The U.S. Department of Energy conducted a risk assessment that clearly demonstrated that the modest risk to a nearby resident at some future time was overwhelmingly due to waste that had already leaked from the tanks. The contribution to risk from a tank suitably grouted with appropriate, inexpensive materials was negligible. A rational assessment of the analytical results would indicate clearly that retrieval and vitrification of tank waste is not warranted by any sensible cost/benefit criteria.

I believe that no-action is the appropriate course of action for several activities for which very expensive, potentially hazardous courses of action have been selected. Worker safety has clearly not been considered in the decision-making process. Use of public money for waste management demands that real risk, not perceived risk, should be the basis for choosing courses of action.

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Response side of this page intentionally left blank.

Commentor No. 5: Martin Bensky

From: Martin Bensky [mbensky@msn.com]
Sent: Tuesday, October 27, 2009 4:06 PM
To: tc&wmeis@saic.com; Mike Fox
Cc: Alan Waltar; Darrell Fisher; Gary Troyer; Gerry Woodcock; John Boland; Wanda Munn; Tony Brooks; Ralph Johnson
Subject: Re: Comment

Of course it's sad that relative risk is never considered in this obscene waste of public money. DOE should at least consider absolute risk, and on that basis, much Hanford work and the decision to refuse outside waste cannot be justified. Which kinds of cancer are statistically significant in King County? I'd like that information as potentially useful back pocket trivia. Incidentally, my notes were submitted as formal comments about the EIS. I think DOE is required to respond, though not for quite a while. *5-1* *5-2* *5-3*

Marty

5-1 Human health risks and transportation risks associated with exposure to radiation are estimated for all of the alternatives evaluated in this *TC & WM EIS*. These risks are presented both in terms of radiation dose (using the unit roentgen equivalent man, or rem) and LCFs (the probability of incurring a future cancer that results in a death). Consistent assumptions are used to analyze the alternatives to allow a meaningful comparison of the associated risks. Such comparisons are considered relative; while the absolute risk for a single alternative could be in question due to lack of data, the uncertainty of future decisions, or other uncertainties, the risks associated with each of the alternatives can still be compared because the same assumptions are used for analysis.

The *TC & WM EIS* Summary shows the risks for each alternative; these risks are compared in relative terms in Section S.5.5 and related subsections. The Summary, Section S.5.5.3, Disposal of Offsite Waste, states, "…receipt of offsite waste streams that contain specified amounts of certain radionuclides, specifically, iodine-129 and technetium-99, could have an adverse impact on the environment. Comparison of human health impact estimates at the IDF-East barrier under Waste Management Alternative 2 for Tank Closure Alternative 2B, with and without offsite waste (see Figure S–22), illustrates this finding. Estimates of peak radiological risk for Waste Management Alternative 2, including disposal of offsite waste at IDF-East, are a factor of approximately six higher than those under Waste Management Alternative 2, with offsite waste removed." Based on this conclusion, DOE proposes, as part of the Preferred Alternative for waste management, that receipt and disposal of offsite waste be delayed, at least until the WTP is operational (74 FR 67189), except for certain limited exemptions.

DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

5-2 This *TC & WM EIS* includes analyses of potential human health risks associated with the proposed actions and alternatives to retrieve, treat, and dispose of Hanford tank waste; decommission FFTF; and upgrade/expand waste disposal capacity at Hanford to provide for disposal of on- and offsite DOE waste. DOE is obligated to fulfill its responsibilities to protect the human and natural environment within the Hanford region, regardless of whether some might consider cancer incidences in King County, Washington, to have a

Commentor No. 5 (cont'd): Martin Bensky

higher statistical significance and warrant greater attention from public-policy decisionmakers. Analysis of cancer incidence in King County, Washington, is not within the scope of the analyses included in this *TC & WM EIS*.

5-3 Consistent with CEQ and DOE NEPA requirements (40 CFR 1503.410 and 10 CFR 1021.313(c), respectively), DOE's responses to comments received on the *Draft TC & WM EIS* are included in this CRD, a volume of this *Final TC & WM EIS*.

Commentor No. 6: Martin Bensky

From: Martin Bensky [mbensky@msn.com]
Sent: Friday, October 30, 2009 5:14 PM
To: tc&wmeis@saic.com
Cc: Bill Farris; Gary Troyer; Gerry Woodcock; Mike Fox; Wanda Munn; John Boland; Bob Schenter; Clinton Bastin; Jim Paglieri; Randy Brich; Sid and Marlene Sourani; Annette Cary
Subject: EIS Comment

The $12B cost estimate for the Waste Treatment Plant, which does not include retrieval of tank waste or ultimate disposal of vitrified waste, is, among other possibilities, sufficient to provide health insurance for approximately 300,000 children from birth until high school graduation. I recognize that it is not the Department of Energy's (USDOE) responsibility to assess whether resources allocated to them represents the best use of those resources. Does USDOE have the responsibility, however, to conduct risk assessments and feed results back to their resource provider to let them know that the minuscule benefit of this resource expenditure is unlikely to come anywhere near justifying the expenditure? ***6-1***

Anyone familiar with the simplest principles of Systems Engineering understands the idea of generating information within one function and feeding it back to previous functions to assess whether proposed actions are appropriate. In the absence of credible risk assessments whose results have been clearly provided to appropriate decision-making functions, the selected courses of action outlined in this Environmental Impact Statement (EIS) have not been shown to have any legitimate, justifiable basis. Some organization, above and outside the USDOE, clearly has not exercised their responsibility and authority to determine the best use of America's finite resources. If the selected actions proposed in this EIS are implemented, I believe that USDOE and its oversight organizations have failed to meet their responsibilities. ***6-2*** ***6-3***

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6-1 Risk analysis is provided throughout this *TC & WM EIS*. This analysis will be considered, along with other environmental, technical, and resource expenditure factors, in DOE's decisions, which will be discussed in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

6-2 All of the analyses in this EIS, including analysis of potential risks to human health and the environment, are available to, and used by, senior agency decisionmakers in making future decisions. Courses of action, however, have not yet been selected by DOE. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

6-3 DOE believes it has met its responsibilities under NEPA and CEQ implementing regulations to seriously consider the potential environmental consequences of its proposed actions and the full range of reasonable alternatives before making decisions about how to proceed.

Commentor No. 7: Clinton Bastin

From: Clinton Bastin [clintonbastin@bellsouth.net]
Sent: Saturday, October 31, 2009 1:22 PM
To: Martin Bensky; tc&wmeis@saic.com
Cc: Bill Farris; Gary Troyer; Gerry Woodcock; Mike Fox; Wanda Munn; John Boland; Bob Schenter; Jim Paglieri; Randy Brich; Sid and Marlene Sourani; Annette Cary
Subject: Re: EIS Comment

THE DOE HAS SPENT MORE THAN $1 TRILLION AND PROVIDED LITTLE OF VALUE. IT DELIBERATELY SUPPRESSED THE REPORT CORRECTING FALSE ALLEGATIONS BY ALVAREZ AND MAKHIJANI IN MIT'S *TECHNOLOGY REVIEW* AND *THE WASHINGTON POST* ABOUT DANGERS OF NUCLEAR WASTE IN ORDER TO OBTAIN $100 BILLION FOR JOBS, PROMOTIONS, ETC. *7-1*

I USED THE REPORT FOR MY LETTER PUBLISHED IN *TECHNOLOGY REVIEW* - BUT THE EDITORS ALSO PUBLISHED A LETTER FROM ALVAREZ

MISQUOTING MY LETTER IN ORDER TO SAY I WAS WRONG

DOE MAKES BERNIE MADOFF LOOK LIKE A SIDEWALK PICKPOCKET

SEE MY ARTICLE IN JUNE 2009 ISSUE OF *NUCLEAR ENGINEERING INTERNATIONAL*, BELOW

DITCH THE DOE

The United States is the only nation that relies on a large federal department to direct and manage energy and nuclear policies, programs, research, development and related activities. The U.S. Department of Energy (DOE) was formed in 1977 to direct national nuclear programs, help resolve energy challenges resulting from America's loss of ability in 1970 to recover enough oil to meet demands, and reduce atmospheric pollution from combustion of fossil fuels.

Instead it has spent about one trillion dollars and done virtually nothing to resolve energy and environmental challenges. It has lost the ability to produce nuclear materials needed for medicine, space exploration and defense and abandoned its responsibility to manage used nuclear power plant fuels and dispose of nuclear wastes. Major changes are needed to resolve energy and environmental challenges, produce nuclear materials, dispose of nuclear waste, while avoiding wasteful expenditures.

The process for change should begin with a decision by US President Barack Obama to follow President Harry S. Truman's example in 1950 when America was faced with the need for a strong nuclear deterrent against military aggression or a nuclear attack by the Soviet Union. President Truman listened to and accepted

7-1 DOE expenditures are beyond the scope of this *TC & WM EIS*.

Commentor No. 7 (cont'd): Clinton Bastin

recommendations from former Manhattan Project Corps of Engineers officers who had provided direction for first and imminently successful use of nuclear technology, by Dupont

President Obama, his energy advisors, energy leaders in Congress and government agencies and others would meet with the engineers and scientists who had provided direction for the safe, successful, well-managed programs and initiatives of the Atomic Energy Commission, Energy Research and Development Administration and Department of Energy.

THE GREATEST NEEDS ARE:

1. A national commitment

A national commitment must be made to a major increase in use of nuclear power to generate electricity and development of technology for more efficient use of nuclear materials. France uses nuclear power for 80% of its total generation of electricity, while the US uses nuclear power for 80% of its pollution-free and carbon-free generation of electricity but only 20% of its total electricity, and releases three times as much carbon dioxide and bio-fuel pollutants to the atmosphere, per person, as France.

Low-temperature, low-density energy sources such as solar, geothermal, wind, and tidal will always be inefficient, expensive and unreliable for generation of electricity for most industrial and domestic applications, and of limited availability in most areas. Batteries, transformers and smart grids and meters for increased reliability and availability will be complex, vulnerable, and add to the cost. The energy needed to build, maintain and operate systems for generation of electricity from so-called"renewable" sources (except hydropower)will approach and may exceed the amount generated, particularly if distributed over wide areas.

2, Corporate management

Competent corporate instead of government management to produce nuclear materials for national needs, manage and recycle used fuel from nuclear power plants and dispose of nuclear wastes. There have been great improvements in safety and performance of nuclear power plants in the US since the accident at Three Mile Island by the commitment to excellence and understanding of operations by plant operators, coordinated by the Institute of Nuclear Power Operations, with improved oversight by the US Nuclear Regulatory Commission.

The outstanding safety and success of Dupont research, development, design, construction and operations at the Savannah River Plant (SRP) were the result of corporate management by Dupont comparable to that for its commercial activities. The repository investigated and planned by Dupont for final disposal of nuclear waste at SRP was unique in the US in that formidable, measurable, geologic

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Commentor No. 7 (cont'd): Clinton Bastin

barriers provided full assurances of isolation for geologic periods of time and a committee of state political and technical leaders appointed by the state governor supported the investigation and plan.

In the 1960s, Dupont's reprocessing facilities were the best in the world due to their capability for remote, rapid replacement of failed equipment, rapid restart after shutdown, and containment of radioactivity under all conditions, including fires and explosion.

3. Better systems
Better systems are needed for development and direction of energy and nuclear policies. : Armed with better understanding of science, energy, and nuclear technology and the importance of competent corporate management, President Obama would announce the commitment to increased use of nuclear power to generate electricity, resume the downsizing of the DOE that was underway during the Clinton Administration, and form the US Energy and Nuclear Technology Policy Board

This nine-member board of experts would develop and direct national energy and nuclear policies and programs. Five members would be appointed by The President with the advice and consent of the Senate, two would be ex-officio, representing the majority and majority leaders of House and Senate energy committees, one would be appointed by the Edison Electric Institute and one by the Business Roundtable Appointed members would serve seven-year, overlapping terms and meet bimonthly or more often to review energy and nuclear policies and programs and make decisions or recommendations for changes as needed. A full-time staff of about 15 engineers and/or scientists with appropriate support would continually review energy and nuclear programs and inform the board. Two or three national laboratories under board direction and oversight would perform research and development in support of nuclear material production, reprocessing and related activities.

Clinton Bastin, Chemical Engineer/Nuclear Scientist US Department of Energy (retired)
clintonbastin@bellsouth.net

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Commentor No. 8: Jerry Johnson

October 27, 2009
6621 W. Victoria Ave.
Kennewick, WA 99336

Dear Ms Burandt:

I read the article in today's paper about the clean up activities at Hanford. With the words about tearing down FFTF I am certain the supporters will once again try to keep it going. I am convinced that this will never happen; the supporters fail to recognize some technical issues that might not be able to be solved. So I wanted to provide you with those issues for the record. *8-1*

In the 1980's I was heavily involved with FFTF. I had various management positions. Two of them are pertinent to restarting the reactor. I decided to check my concerns with a member of the ACRS (Advisory Committee on Reactor Safeguards) which is tied to the U.S. NRC. This member of the ACRS confirmed my views in phone conversation on June 25, 2009.

If FFTF were to be operated as a commercial facility it would have to be licensed by the NRC.

When we were in the process of getting FFTF built and approved to operate Westinghouse did considerable testing and analysis of potential reactor accidents. Two of these were the LOF, which is a loss of coolant flow and the HCDA (Hypothetical Core Disruptive Accident). The HCDA involved the analysis of various reactivity insertions. Results of analyses and tests were presented to the NRC. While NRC certification of FFTF via a full CFR report was not required we still went through all of the steps as if we were going to apply for a license.

The reactor accident analyses were based on a series of tests conducted at the TREAT facility in Idaho. If FFTF were to be reassembled such accident analyses would have to be done again and if there were any changes in the composition of the fuel or configuration of the pellets the NRC would require data to show that the accidents can be mitigated by the various control and shut-down systems. It may not be possible to do such tests today. So I feel that having an accepted reactor safety analysis will be a major hurdle.

My other technical concern is with the state of the reactor vessel. When the reactor was running there was a neutron flux gradient across the wall as well as a thermal gradient. Upon shutdown of the reactor these conditions would produce a state of tri-axial stress in various parts of the vessel. A restart, following a very long shutdown, could result in the formation of cracks because of the nature of that residual stress. We had a program to monitor the structural integrity of the vessel and other components. There were some assemblies that held surveillance samples of the materials used for the various components, including the reactor vessel. These samples were used to evaluate the mechanical properties of the steel; most notable being fracture mechanics tests.

8-1 Comment noted.

Commentor No. 8 (cont'd): Jerry Johnson

Now the ACRS would require the operator to show that the restart would not result in formation of any cracks. The only way to determine this would involve the testing of these surveillance samples. I am not certain that they still exist.

The ACRS member told me that the licensing process takes seven years. Without priority from the US President any new request for the licensing process goes to the bottom of the list.

So my main concerns are these technical issues with the safety tests and the material condition tests. I do feel that they could be "show-stoppers". The rest of my thoughts are only my opinions.

I feel that getting a fuel fabrication system would be difficult but doable. The real issue comes with the disposal of spent fuel and that remains a major issue in the US. Without a viable plan for disposal it may not be possible to restart the reactor.

I am of the opinion that the whole effort to get FFTF up and running would cost a number of billions of dollars. What company would spend billions before getting any payback?

Finally I do not think that the reactor would survive on a single mission. The cost of operating it might be prohibitive relative to the income from isotope production. Operating FFTF as a multi-purpose facility would lead to numerous issues.

My viewpoint is that the best thing to do is to dismantle the reactor and move on. ‖ ***8-1 cont'd***

Yours truly,

Jerry Johnson

xxx-xxx-xxxx

johnson66@charter.net

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Commentor No. 9: Don M. Hallum

Oct 31 2009

Mary Beth Burandt
EIS Document Manager
DOE of River Protection
P.O. BOX 1178, Richland, WA 99352

I am writing in response to the 150 page "BOOK" that was sent to me.

I've come to our household I am wondering how many other WA. households received this large 150 page document?

I'm in agreement that the HANford site needs to be cleaned up and I'm sure most people do — especially in the Tri-cities,

I would like to know how much our money was spent by DOE on this book + Mailing? **9-1**

Sincerly,
DON M. HALLUM
5214 Maple St #203
Edmonds, WA 98020
[redacted]

PS; To me the figures at bottom of 3113, 313 alternative is the most cost efficient option. Others are WAY too expensive. Also, hardly any of us needs the information sent out, but it's too late. **9-2**

9-1 Printing costs for hard copies of the draft EIS (and CDs) were approximately $330,789; shipping cost for copies was approximately $34,194. In total, approximately $364,983 was spent by DOE to print and mail copies, including CDs, of the draft EIS.

9-2 Summary, Table S–30, and Chapter 2, Table 2–51, present the cost estimates for only final-waste-form disposal under each of the Tank Closure alternatives. These disposal costs compose a portion of the projected total costs associated with each alternative, which are presented in Tables S–30 and 2–51.

Commentor No. 10: Joseph John Bevelacqua

Bevelacqua Resources

343 Adair Drive
Richland, WA 99352
www.bevelacquaresources.com
bevelresou@aol.com
xxx-xxx-xxxx

BR-RL-0509

Mary Beth Burandt
EIS Document Manager
DOE Office of River Protection
P.O. Box 1178
Richland, WA 99352

December 7, 2009

RE: DOE/EIS-0391, Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site

Dear Ms. Burandt:

Thank you for providing a copy of DOE/EIS-0391, Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site. The document represents a significant step forward in the Hanford cleanup, but omits essential elements of environmental protection advocated by the International Commission on Radiological Protection (ICRP). This is particularly puzzling since the draft EIS references ICRP 103, which contains new, explicit guidance for environmental protection.

ICRP 103, published in 2007, provided revised environmental guidance initially outlined in ICRP 91 (2003). Given the availability and publication dates of these documents and the international acceptance of the recommendations of the ICRP, not including the use of Reference Animals and Plants (RAAP) in the draft EIS is quite astonishing. In view of the care taken by DOE in addressing the cultural aspects of the cleanup and the importance of natural species in native cultures, not including RAAP in the assessment is a serious omission that requires correction.

Correcting this omission would be relatively straightforward since ICRP 108 (2008) provides a set of dose conversion factors that allows the dose to be calculated to RAAP including organisms relevant to the Hanford Site. As defined in ICRP 108, these species include reference deer, reference duck, reference bee, and reference wild grass that are present at the Hanford site. Performing the requisite calculations would strengthen the draft EIS and bring it into compliance with current international guidance. Addressing these issues in a timely manner is in the best interest of the Hanford stakeholders.

10-1

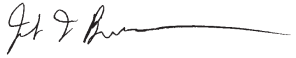
1

10-1 This *TC & WM EIS* used the latest guidance from International Commission on Radiological Protection (ICRP) Publication 103 (Valentin 2007) and the benchmarks contained within are considered adequate for the purposes of this EIS. The reasons for selecting representative receptors for the risk analysis in support of this *TC & WM EIS* are given in Appendix P, Sections P.2.1, P.2.1.2, P.3.1.1.2, and P.3.2.1.2. Selected receptors are relevant to Hanford because they occur there, including species that are important to native cultures. In addition, some *TC & WM EIS* receptors were used in previous risk assessments at Hanford, such as the *Columbia River Comprehensive Impact Assessment*, and other EISs. The advantages of using Hanford-specific receptors were judged to exceed potential benefits of using international reference receptors, such as those in ICRP Publication 108, because those benefits do not contribute to the primary goals of the ecological risk analysis for this *TC & WM EIS*, namely the unbiased comparison of alternatives.

Commentor No. 10 (cont'd): Joseph John Bevelacqua

I look forward to receiving the revised, final EIS.

Regards,



Dr. Joseph John Bevelacqua, President
Bevelacqua Resources

JJB/tms

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establishes its own set of radiation standards. The various exposure limits set by DOE and EPA for radiation workers and members of the public are given in Table K–1.

Table K–1. Exposure Limits for Members of the Public and Radiation Workers

Guidance Criteria (Organization)	Public Exposure Limits at the Site Boundary	Worker Exposure Limits
10 CFR 835 (DOE)	–	5,000 millirem per year[a]
10 CFR 835.1002 (DOE)	–	1,000 millirem per year[b]
DOE Order 5400.5 (DOE)[c]	10 millirem per year (all air pathways) 4 millirem per year (drinking-water pathways) 100 millirem per year (all pathways)	–
40 CFR 61.90–61.97 (EPA)	10 millirem per year (all air pathways)	–
40 CFR 141 (EPA)	4 millirem per year (drinking-water pathways)	–

[a] Although this measurement is a limit (or level) that is enforced by DOE, worker doses must be managed in accordance with as low as is reasonably achievable principles. Refer to footnote b.

[b] This measurement is a control level. It was established by DOE to assist in achieving its goal to maintain radiological doses as low as is reasonably achievable. DOE recommends that facilities adopt a more-limiting 500 millirem per year Administrative Control Level (DOE Standard 1098-99). Reasonable attempts have to be made by the site to maintain individual worker doses below these levels.

[c] Derived from or consistent with 40 CFR 61.90–61.97; 40 CFR 141; and 10 CFR 20.

Key: CFR=*Code of Federal Regulations*; DOE=U.S. Department of Energy; EPA=U.S. Environmental Protection Agency.

K.1.1.3 Health Effects due to Exposure to Radiation

To provide the background for discussions of impacts, this section explains the basic concepts used in the evaluation of radiation effects. Radiation can cause a variety of damaging health effects in people. The most significant effects are induced cancer fatalities, called "latent cancer fatalities" (LCFs) because the onset of cancer may take many years to develop after the radiation dose is received. In this *TC & WM EIS*, LCFs are used to measure the estimated risk due to radiation exposure.

The National Research Council's BEIR Committee has prepared a series of reports to advise the Federal Government on the health consequences of radiation exposure. Based on its 1990 report, *Health Effects of Exposure to Low Levels of Ionizing Radiation, BEIR V* (National Research Council 1990), the former Committee on Interagency Radiation Research and Policy Coordination recommended cancer risk factors of 0.0005 per rem for the public and 0.0004 per rem for working-age populations (CIRRPC 1992). In 2002, the Interagency Steering Committee on Radiation Standards (ISCORS) recommended that Federal agencies use conversion factors of 0.0006 fatal cancers per rem for mortality and 0.0008 cancers per rem for morbidity when making qualitative or semiquantitative estimates of risk from radiation exposure to members of the general public. No separate values were recommended for workers. The DOE Office of Environmental and Policy Guidance subsequently recommended that DOE personnel and contractors use the risk factors recommended by ISCORS, stating that, for most purposes, the value for the general population (0.0006 fatal cancers per rem) could be used for both workers and members of the public in National Environmental Policy Act (NEPA) analyses (DOE 2003).

Recent publications by both the BEIR Committee and the ICRP support the continued use of the ISCORS-recommended risk values. *Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII Phase 2* (National Research Council 2006) reported fatal cancer risk factors of 0.00048 per rem for males and 0.00066 per rem for females in a population with an age distribution similar to that of the entire U.S. population (average value of 0.00057 per rem for a population with equal numbers of males and females). ICRP Publication 103 (Valentin 2007) recommends nominal cancer risk coefficients of 0.00041 and 0.00055 per rem for adults and the general population, respectively, and estimates the risk from heritable effects to be about 3 to 4 percent of the nominal fatal cancer risk (see Table K–2).

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Table K–2. Nominal Health Risk Estimators Associated with Exposure to Ionizing Radiation[a]

Exposed Population	Cancer[b]	Genetic Effects	Total
Worker (Adult)[c]	0.00041	0.00001	0.00042
Whole	0.00055	0.00002	0.00057

[a] Risk per rem (individual dose) or person-rem (population dose). For individual doses equal to or greater than 20 rem, the health risk estimators are multiplied by 2.
[b] Risk of all cancers, adjusted for lethality and quality-of-life impacts.
[c] Ages 18–64 years.

Source: Valentin 2007, Table A.4.4.

Accordingly, a risk factor of 0.0006 LCFs per rem was used in this *TC & WM EIS* to estimate risk due to radiation doses from normal operations and accidents. For high individual doses (greater than or equal to 20 rem), the health risk factor was multiplied by 2. In addition, nuclide-specific risk coefficients were developed using techniques accounting for gender, age, and exposure pathway (Eckerman et al. 1999). These coefficients, documented in the Health Effects Assessment Summary Tables database, were adopted for use in evaluation of impacts occurring in the long-term period following stabilization or closure of the high-level radioactive waste (HLW) tanks.

Using the risk factors discussed above, a calculated dose can be used to provide an estimate of the risk of an LCF. For example, if each member of a population of 100,000 people were exposed to a one-time dose of 100 millirem (0.1 rem), the collective dose would be 10,000 person-rem (100,000 persons times 0.1 rem). Using the risk factor of 0.0006 LCFs per person-rem, this collective dose is expected to cause 6 additional LCFs in this population (10,000 person-rem times 0.0006 LCFs per person-rem).

Sometimes, calculations of the number of LCFs do not yield whole numbers, and may yield a number less than 1. For example, if each individual of a population of 100,000 people were to receive an annual dose of 1 millirem (0.001 rem), the collective dose would be 100 person-rem, and the corresponding risk of an LCF would be 0.06 (100,000 persons times 0.001 rem times 0.0006 LCFs per person-rem). A fractional result should be interpreted as a statistical estimate. That is, 0.06 is the average number of LCFs expected if many groups of 100,000 people were to experience the same radiation exposure situation. For most groups, no LCFs would occur; in a few groups, 1 LCF would occur; in a very small number of groups, 2 or more LCFs would occur. The average number of LCFs over all of the groups would be 0.06 (just like the average of 0, 0, 0, and 1 is 1 divided by 4, or 0.25). In the preceding example, the most likely outcome for any single group would be 0 LCFs. In this *TC & WM EIS*, LCFs calculated for a population are presented as both the rounded whole number, representing the most likely outcome for that population, and the calculated statistical estimate of risk, presented in parentheses.

The numerical estimates of LCFs presented in this environmental impact statement (EIS) were obtained using a linear extrapolation from the nominal risk estimated for lifetime total cancer mortality that results from a dose of 0.1 gray (10 rad). Other methods of extrapolation to the low-dose region could yield higher or lower numerical estimates of LCFs. Studies of human populations exposed to low doses are inadequate to demonstrate the actual level of risk. There is scientific uncertainty about cancer risk in the low-dose region below the range of epidemiologic observation. However, comprehensive review of available biological and biophysical data supports a "linear-no-threshold" risk model—in which the risk of cancer proceeds in a linear fashion at lower doses without a threshold—and that the smallest dose has the potential to cause a small increase in risk to humans (National Research Council 2006).

K.1.2 Chemicals

The reprocessing of nuclear fuels, the manufacture of nuclear materials, and the processing of fuel cycle waste entail the use of chemicals. Some of the more-hazardous chemicals could pose risks to human health, even to the point of being fatal, if they are accidentally released to the environment or if they come

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Commentor No. 11: Nancy Kroening

From: nancy newkirk [greeniefrost@yahoo.com]
Sent: Friday, November 20, 2009 2:34 PM
To: tc&wmeis@saic.com
Subject: Hanford Tank Waste

Madeleine Cadbury Brown
Washington State Department of Ecology
Nuclear Waste Program
(xxx) xxx-xxxx
madeleine.brown@ecy.wa.gov

I am commenting on the Hanford change EIS. I support the comments of the Washington State Department of Ecology's comments. They sound very reasonsble.

I am very concerned about the numbers of changes each year on the cleanup. Some of these changes are positive and will speed up cleanup. However, when changes slow down work and/or invite MORE waste into the Reservation, it is a big problem — *11-1*

The reason I am so concerned is that our grandchildren spend at least a week in Richland each year. We want cleanup to be done quickly, carefully, and with science, not politics, as the basis for decision. We want wastes to be put in solid form and stored so they will not further contaminate the land and water. We want ground water to be protected as well as air. We remain surprised that there is still so much waste to processed. — *11-2*

The people of Washington voted to keep new wastes out of the state. We hope this will be honored. And, we hope that the residents of Tri-Cities will be protected against exposure to radiation by being close to trucks carrying waste. — *11-1 cont'd* *11-3*

Thank you for receiving my comments.

Nancy Kroening
123 East Calavar Road
Phoenix AZ 85022
greeniefrost@yahoo.com

11-1 Although beyond the scope of this *TC & WM EIS*, ongoing Hanford cleanup activities are of high priority to DOE and are conducted in accordance with the TPA. This agreement specifies milestones and schedules for cleanup of all parts of Hanford. DOE is fully committed to honoring this agreement.

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

11-2 In general, this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, the cumulative impacts analysis in this EIS does consider the effects of reasonably foreseeable Hanford remedial activities (see Chapter 6 and Appendix U). DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Each Tank Closure alternative would produce a solid primary-waste form.

11-3 The transportation of radioactive materials and waste, both coming to and leaving Hanford, must comply with the U.S. Department of Transportation (DOT) and NRC regulations that promote the protection of human health and the environment. This includes requiring the use of certified packaging that minimizes the radiation dose rate outside the transportation package. As indicated in the *TC & WM EIS* Summary, Section S.5.3; Chapter 2, Section 2.8.3.10; and Chapter 4, Section 4.3.12, it is unlikely that transportation of radioactive waste would cause an additional fatality as a result of radiation from either incident-free transportation or postulated transportation accidents.

Commentor Number 12 is not included in this Comment-Response Document because it is a duplicate of Commentor Number 10.

Commentor No. 13: Gerry Pollet, Executive Director, Heart of America Northwest

TO: TPA Agency Involvement Officers; DOE-ORP Manager Shirley Olinger: TCWMEIS Manager Mary Beth Burandt; Ecology Nuclear Waste Program Manager Jane Hedges; Melissa Nielson, Director, USDOE-HQ EM Office of Public and Intergovernmental Accountability

FR: Gerry Pollet, Director, Heart of America Northwest (gerry@hoanw.org / 206-382-1014 / xxx-xxx-xxxx cell)

Date: December 28, 2009

RE: Collaborative Planning Needed for Public Hearings on the Tank Closure and Waste Management EIS --- Date and location setting for hearings needs collaboration and needs to comply with 45 day notice provision of TPA Community Relations Plan --- Goals for public involvement not identified

CC: Ken Niles, State of Oregon Dept. of Energy; Hanford Advisory Board Public Involvement Committee (PIC); Hanford Public Interest Network organizations

The Tank Closure Waste Management Environmental Impact Statement (TCWMEIS) has been identified and anticipated for years as the most extensive environmental review for the Hanford site. Proposals for the most debated and long awaited decisions affecting every aspect of Hanford Clean-Up, are formally dependent upon the TCWMEIS. The EIS has been anticipated – and delayed for years. During this time, we have repeatedly urged that there be a dialogue regarding the strategic goals for public involvement to be served by the TCWMEIS for a strategic Public involvement plan for Hanford Clean-Up. There has been no effort to identify public involvement goals for the TCWMEIS and to ensure that it leaves a lasting legacy of an informed public for upcoming decisions.

We have repeatedly asked for collaborative planning for public hearings on the TCWMEIS. This has not happened. Time is running out and a collaborative planning effort is needed ASAP, starting with a conference call to identify:

- Hearing location and dates with 45 days advance notice;
- Pre-hearing workshops and information needs for various segments of the public in different areas of the region.

The Tri-Party Agreement (TPA) Public Involvement Plan calls for collaboration in planning the public hearings and involvement effort with a 45 day advance notice of the hearing dates and locations. For the TCWMEIS, this 45 day period is vital given the need to adequately plan and encourage public involvement, to allow ample time for drafting, publishing and mailing materials; and, for a comment period of this great importance, huge scope (covering scores of major decisions) and complexity – to allow time to plan and schedule pre-hearing workshops to give the public meaningful opportunity to comment.

At the December 15 workshop in Richland for the HAB, I was disturbed that there was no discussion of public involvement planning. At the end of the workshop, I asked EIS Manager Mary Beth Burandt and TPA PIO staff to set up such a discussion. Ms. Burandt informed me that USDOE management was setting dates for February – with no public or other input.

This is not acceptable.

13-1

13-1 DOE's public involvement process for this EIS was based on CEQ and DOE regulations for implementing NEPA; DOE Order 451.1B requirements; and applicable DOE NEPA guidance (available at http://energy.gov/nepa). While DOE is not bound by the terms of the TPA Public Involvement Plan in conducting NEPA processes at Hanford, DOE nevertheless considered the TPA Public Involvement Plan in developing the public involvement plan for the *Draft TC & WM EIS* jointly with Ecology as a cooperating agency.

In response to the commentor's request for more-extensive collaboration in the *TC & WM EIS* public hearing planning process, as well as DOE's desire to communicate with and involve the public in this process, a Hanford Advisory Board (HAB) workshop was held on December 15, 2009, and DOE stakeholder teleconferences were held on December 30, 2009, and January 5 and 6, 2010. Public hearing dates and locations were identified and discussed, and it was agreed that additional public hearings would be held in Spokane, Washington, and La Grande and Eugene, Oregon. Pre-hearing workshops were also discussed. In addition, DOE held a 1-hour open house prior to each public hearing to allow the public to meet informally with members of the *TC & WM EIS* team, ask questions, and learn more about this EIS. Informative factsheets were provided at these open houses.

A suggestion was made during one of the teleconferences to move the planned January 26, 2010, public hearing in Richland, Washington, to meet the 30- to 45-day notification goal under the TPA Community Relations Plan (the January/February timeframe for public hearings was announced at the December 15, 2009, HAB meeting). During the call, the Hanford communities indicated their support for the January 26 public hearing date and their opposition to changing it. In response to a request that the Seattle public hearing not be scheduled for a week when schools were out, the hearing date was moved to March 8, 2010.

Only one hearing location, in Portland, had paid parking available. However, parking fees were waived by the hotel for hearing attendees, and DOE held hearings in locations that encouraged university student attendance and participation, such as Eastern Oregon University.

DOE mailed a copy of the draft EIS via Federal Express to every individual who requested one. For those individuals who requested a printed copy of the Summary, a CD containing the complete draft EIS and a Reader's Guide also

Commentor No. 13 (cont'd): Gerry Pollet, Executive Director, Heart of America Northwest

If the TCWMEIS is to be used for TPA and state RCRA permit decisions, it must meet TPA public involvement standards. Regardless of legal requirements, we expect that USDOE would make every effort to meet the minimum expectations of the TPA Community Relations Plan and engage stakeholders and the regulators in a collaborative effort to plan for meaningful public involvement in the TCWMEIS comment period, starting with a collaborative effort to identify suitable locations and dates with 45 day of advance notice for the hearings.

We ask that USDOE stop attempting to schedule the hearings without collaboration and discussion. Please set up a conference call with stakeholder groups from around the region and members of the HAB PIC to start the collaborative process envisioned in the TPA Community Relations Plan.

Secondly, ensure that there will be a full 45 days of notice for the location and time of hearings.

Thirdly, use the HAB PIC to plan for a discussion setting strategic goals and objectives for public involvement in the TCWMEIS, including, for example, how information regarding the identified impacts from proposed actions and alternatives will be communicated both for public comment on the TCWMEIS and for long-term use of this information in enabling the public to understand and comment on future proposed actions which will rely on the TCWMEIS (e.g., the decisions on tank closure, TPA and Central Plateau Strategy decisions; the Hanford RCRA permit…). This effort should include pre-hearing workshops in various locations.[1]

We propose a conference call with citizen groups, PIC and TPA PIOs, States and Tribes during the first week of January to discuss how many hearings will be held, where they will be held (e.g., including Spokane and Eastern Oregon)[2] and when; to be followed by discussions regarding the information needed to be given to the public and whether USDOE will commit to pre-hearing workshops, and whether the agencies will prepare focus sheets on proposed actions and identified impacts.

Forty five days of notice will mean that the hearings – if identified collaboratively by January 11th, would start the hearings in late February.[3] If this seems like an extended period of time, we point out that USDOE had years of delay before issuing the EIS[4]; and, months during which we sought to have this discussion to no avail. After spending millions on the TCWMEIS, it is not too much to ask to have USDOE actually plan collaboratively for public hearings and how the public would be informed to offer comment.
We urge that the collaborative process begin ASAP to select dates and locations of hearings and identify how public involvement goals for the TCWMEIS will be met.

13-1 cont'd

[1] There was disappointment with the one workshop held by USDOE on December 15, for which there was no apparent use of input for the agenda, no discussion of impacts, and no discussion of public involvement.
[2] In addition to hearings in locations used for scoping (Portland, Hood River, Tri-Cities, Seattle), we believe there should be a hearing in Spokane and on the CTUIR Reservation or Pendleton or LaGrande, OR along the proposed transport route for USDOE's preferred alternative to utilize Hanford as a national radioactive waste dump.
[3] E.g., we would ask that hearings not be slated for the week schools are out in Seattle in February.
USDOE recently was in charge of selecting venues for TPA change hearings, and did so without the collaboration required. This led to hearings where the public had to pay for parking, overcrowded venues and failure to use lower cost meeting spaces that would have allowed increased attendance by university students (after the agencies identified increased accessibility for university students as an objective).
[4] People who requested full printed copies of the EIS have not received them. Publication and availability of the CD version is not a substitute for the full printed version for people or organizations seeking in-depth review. Ironically, USDOE has prepared a "Readers' Guide" to the EIS which is available on the CD, but was not mailed as a readable document to people who asked for the Summary.

was attached to the inside cover. The Reader's Guide was developed to assist the reader in understanding and navigating through the full *Draft TC & WM EIS*, not the Summary.

Commentor No. 14: Edward Fredenburg, Washington State Department of Ecology

From: Fredenburg, Edward (ECY) [mailto:Efre461@ecy.wa.gov]
Sent: Wednesday, December 09, 2009 12:23 PM
To: Burandt, Mary E
Subject: errors in EIS

Mary Beth, a couple of errors for SAIC to fix in the final:

Page 5-302, Section 5.1.11—last sentence refers to Section 5.1.3. Correct reference is 5.1.1.3. *14-1*

Page 2-100, Figure 2-56: New DSTs are shown in Figure. Paragraph on Storage on page 2-99 says no new DSTs would be required. *14-2*

14-1 The reference to Chapter 5, Section 5.1.1.3, has been corrected.

14-2 The figure illustrating the primary components of Tank Closure Alternative 6B has been revised to indicate that no new double-shell tanks (DSTs) would be required.

Commentor No. 15: Ken Niles, Assistant Director, Oregon Department of Energy

From: Ken Niles [mailto:ken.niles@state.or.us]
Sent: Monday, January 04, 2010 1:53 PM
To: Burandt, Mary E; Olinger, Shirley J
Cc: Gamache, Lori M; Olds, Theodore E (Erik); Lutz, Karen
Subject: TC & WM EIS - Preliminary Comments
Attachments: TC&WM-EIS-OR_Alternative.pdf

Attached are some preliminary comments on the Tank Closure and Waste Management draft EIS, focused on the tank waste treatment/closure alternatives.

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Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

Oregon
Theodore R. Kulongoski, Governor

OREGON DEPARTMENT OF ENERGY
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www.Oregon.gov/ENERGY

January 4, 2010

Mary Beth Burandt, Document Manager
Office of River Protection
U.S. Department of Energy
Post Office Box 1178
Richland, WA 99352

Dear Ms. Burandt:

The Oregon Department of Energy has completed a preliminary analysis of the draft Tank Closure and Waste Management Environmental Impact Statement (TC&WM EIS). In our initial review, we have focused in large part on the 11 Tank Closure alternatives that are analyzed in the EIS. We reviewed each against the following criteria:

- Long-term protectiveness of the Columbia River, primarily associated with preventing additional migration of contaminants into Hanford's groundwater
- Compliance with the Tri-Party Agreement; meeting schedules for waste treatment and requirements for quality of the final waste form
- Permanence of the actions (for example, durability of the waste form so as to prevent future releases)
- Minimizing natural resource injury liability
- Protectiveness of human health and the environment

While the various proposed alternatives provide useful information by analyzing and comparing potential impacts and differences among the alternatives, to our concern we found that perhaps only one of the Tank Closure alternatives satisfied all of these criteria. Many failed most or all of the criteria (see Attachment 1).

The U.S. Department of Energy's (DOE) recent decision not to pursue treating and sending some waste to the Waste Isolation Pilot Plant eliminates alternatives 3A, 3B, 3C, 4 and 5. Notwithstanding that decision, each of these alternatives, along with five of the remaining six alternatives, had one or more fatal flaws that prevented each from meeting our criteria.

There are elements scattered within the range of many of the alternatives which, if combined in a new alternative, would likely provide a preferable long-term approach for

15-1

15-1 Regarding the adequacy of the Tank Closure alternatives analyzed in the *Draft TC & WM EIS* and the suggestion that the proposal put forth by the Oregon Department of Energy be evaluated as a distinct alternative in this EIS, DOE has determined that implementation of such an alternative would be technically infeasible as defined. Accordingly, the Oregon proposal cannot be considered a reasonable alternative and was not analyzed in detail in this *TC & WM EIS*. For a more comprehensive discussion of this issue, see Section 2.6 of this CRD.

Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

successfully immobilizing Hanford's tank waste, closing the tank farms, and protecting the public and the environment.

Therefore, we propose and strongly encourage DOE to analyze the potential impacts of the following new alternative:

Alternative 7 – (the Oregon Proposal)

Tank Waste Storage. Continue current waste management operations using existing tank storage facilities. No new double-shell tanks would be required, *unless* there is a delay in getting the Waste Treatment Plant (WTP) operational. New Waste Receiver Facility tanks would be constructed. These tanks should be sized so that all necessary waste transfers will be possible, and to ease retrieval operations.

Tank Waste Retrieval. Retrieve a *minimum* 99 percent of the waste from each of the tanks. Determine on a tank-by-tank basis whether a final chemical wash, mechanical removal step, or other additional retrieval is necessary.

Tank Waste Treatment. Construct and operate the existing WTP as currently configured (two high-level waste melters and two low-activity waste [LAW] melters). Supplement the existing WTP by expanding LAW vitrification capacity to the extent necessary to complete LAW treatment no later than 2040. Do not use supplemental technologies such as bulk vitrification, cast stone or steam reforming. Pre-treat all waste streams routed to the WTP, and include technetium 99 removal in the pre-treatment process so that technetium is routed to the high-level waste melter. Assume that no waste will qualify as transuranic for disposal at the Waste Isolation Pilot Plant, but programmatically continue to pursue that as an option for the near future for a limited amount of waste.

As a sub-option, DOE should analyze the value of using iron phosphate glass in the second LAW treatment facility to determine whether that would provide useful flexibility in treating some waste streams and also whether it would result in a more durable glass form for those waste streams.

DOE should also analyze the impacts and benefits of using fractional crystallization to remove the bulk of the non-radioactive waste from the tank waste streams, in order to potentially reduce the volume of the glass waste form destined for the deep repository. The separated sodium wastes should be treated to destroy any RCRA hazards and to produce a waste form meeting the land disposal restrictions under RCRA, the Atomic Energy Act and Nuclear Regulatory Commission requirements for near-surface land disposal of mildly radioactive wastes.

Cesium and Strontium Capsules. Do not include the cesium and strontium capsules in the WTP waste stream. Instead, convert from pool storage to dry

15-1 cont'd

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Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

storage and continue to pursue ultimate disposal into a geologic repository in a form suitable to meet the waste acceptance criteria for the facility as an alternative secondary waste form.

Tank Waste Disposal. Store immobilized high-level waste canisters on site in interim storage facilities until a national disposal facility is available. Assuming shallow burial of the immobilized LAW will be allowed, dispose of vitrified LAW on site. Since vitrified LAW may remain classified as high-level waste, flexibility will be required for planning for its permanent disposal.

Tank Farm Closure. Characterize leaked tank wastes in and beneath the tank farms, along with waste trapped between the steel and concrete tank structures and in pipelines and ancillary equipment. Use that information to make a risk-based decision on which tanks, pipelines and ancillary equipment have leaked and whether contamination may have spread beneath non-leaking tanks. As appropriate, exhume tanks to provide access to contaminated soils. This may include leaking tanks, adjacent (clean) tanks in contact with contaminated soil, and possibly some additional clean tanks that block access to heavily contaminated soil. Sample and characterize the below-tank contaminated soils and remediate soils as deeply as necessary. Build and operate a facility to treat contaminated soils as described in Alternatives 6A and 6B. Replace removed, contaminated material with clean soil from onsite sources.

After waste retrieval of at least 99 percent from tanks, pipelines and ancillary equipment, fill remaining (clean) tanks and ancillary equipment with a highly durable fill material to immobilize the residual waste, prevent future tank subsidence, and discourage intruder access. Close these remaining tanks using a landfill barrier designed to ensure long term permanence and isolation of the remaining wastes. It may be necessary first to remove some soil and ancillary equipment if there have been leaks from pipelines and other equipment.

Dispose of treated contaminated soils, tank shells and ancillary equipment on site in a new disposal facility. Monitor the site using post-closure care.

Tank Farm Cribs and Trenches Closure. As single-shell tank farm closure operations are completed, sample and characterize the associated cribs and trenches (ditches) disposal sites. Remove-treat-dispose of the contaminated materials and soils that exceed protectiveness criteria. Close the cribs and trenches (ditches) using a landfill barrier.

15-1 cont'd

We won't know whether the proposed Alternative 7 will meet the criteria that we have identified until and unless DOE analyzes each of these actions individually and collectively. We hope that DOE will agree to conduct that analysis.

We will provide additional written comments prior to the comment deadline that will address additional details related to tank waste treatment and tank closure. We will

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Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

also provide comments on the Waste Management and Fast Flux Test Facility alternatives.

If you have questions or comments on Oregon's proposed alternative, please contact me at 503-378-4906.

Sincerely,

Ken Niles
Assistant Director

c.c. Jane Hedges, Washington Department of Ecology
Dennis Faulk, U.S. Environmental Protection Agency
Shirley Olinger, U.S. Department of Energy Office of River Protection
Dave Brockman, U.S. Department of Energy Richland Office
Stuart Harris, Confederated Tribes of the Umatilla Indian Reservation
Gabriel Bohnee, Nez Perce Tribe
Russell Jim, Yakama Indian Nation
Oregon Hanford Cleanup Board
Hanford Advisory Board
Hanford Natural Resource Trustee Council

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Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

ATTACHMENT 1

Why Existing Tank Closure Alternatives Are Not Acceptable

Alternative 1 – No Action. Leaving the waste in Hanford's tanks for 100 years and canceling the planned waste treatment program would result in wide-spread environmental contamination. Moreover, the "No Action" alternative need not be a stop action alternative. It can and usually is presumed to continue the actions in progress as the basis for which further actions are contrasted.

Alternative 1 is not protective of the Columbia River; does not comply with the Tri-Party Agreement; there are no actions taken that would have a positive permanent affect; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 2A – Existing WTP Vitrification; No Closure. Treatment capacity must be expanded beyond the 2 + 2 configuration of the WTP in order to accomplish immobilization of Hanford's tank waste in a somewhat reasonable time frame. Treating waste until 2093 would likely result in extensive tank leaks during that period and additional wide-spread environmental contamination. Eventually ceasing administrative control of the tank farms without closure would also likely have significant adverse environmental impacts. Prolonging the treatment mission so as to have to replace the WTP, the double-shell tanks, and other major facilities is not reasonable. This alternative also excludes technetium 99 from pre-treatment. As technetium is one of the primary radionuclides in terms of projected long-term impacts, we believe a robust system must be in place to ensure that technetium 99 is diverted to the high-level vitrification waste stream. Alternative 2A is a step backward from the existing plans.

Alternative 2A is not protective of the Columbia River; does not comply with the Tri-Party Agreement schedules; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 2B – Expanded WTP Vitrification; Landfill Closure. Our major objection with this alternative is closing the entire tank farm system using a landfill barrier. That does nothing to deal with leaked waste beneath the tanks farms that is currently in the vadose zone – much of which will likely eventually reach the groundwater and potentially the Columbia River. This alternative does include removing soil and tank infrastructure down to 15 feet from two tank farms. We believe this is a concept that should be expanded to include other tanks farms, but the 15 foot limit does not adequately address contamination existing at greater depth in many if not all of the single-shell tank farms. This alternative does include technetium 99 removal in the pre-

15-2

15-2 Tank Closure Alternative 1 (No Action) -- DOE developed the No Action Alternative consistent with CEQ guidance. As described in CEQ guidance "Forty Most Asked Questions Concerning NEPA Regulations" (46 FR 18026), there are two types of No Action Alternatives allowed; one case where work is stopped and impacts are evaluated, and another case where ongoing activities are evaluated as a "no change" and continuation of the present course of action. In 2003, during scoping of the "Tank Closure EIS," the No Action Alternative at that time reflected the implementation of the *TWRS EIS* ROD. Based on comments received during scoping in 2003, an additional alternative was added that, also consistent with CEQ guidance, reflected that work at WTP would end and the waste would not be treated. This alternative is the current Tank Closure No Action Alternative and the present course of action (i.e., implementation of the *TWRS EIS* ROD) became Tank Closure Alternative 2A. See Chapter 1, Section 1.6.2.2, Issues Identified During the "Tank Closure EIS" Scoping Process, for more information on changes made as a result of scoping.

Tank Closure Alternative 2A -- Since 2003, one of the key treatment questions related to WTP treatment has been associated with the treatment timeframe. As explained above, Tank Closure Alternative 2A retains implementation of the *TWRS EIS* ROD to address the current vitrification capacity presently under construction. Alternative 2B was developed to address an expansion of LAW capacity for the existing WTP. One of the key differences between Alternative 2A and 2B with respect to treatment is for DOE to evaluate the impacts of shortening the mission timeframe from 2093 to 2043 and resource areas impacted by this difference. See Chapter 2, Section 2.5.2.2.1, Tank Closure Alternative 2A: Existing WTP Vitrification; No Closure and Section 2.5.2.2.2, Tank Closure Alternative 2B: Expanded WTP Vitrification; Landfill Closure, for more-detailed information on the specific aspects of the alternatives.

Tank Closure Alternative 2B -- One aspect evaluated between Tank Closure Alternatives 2A and 2B is technetium-99 removal in the WTP, which is a pretreatment activity that separates technetium-99 and sends it for immobilization into IHLW glass. Under Tank Closure Alternative 2A, the technetium-99 removal is included, whereas under Alternative 2B, it is not. In comparing the estimates of impacts at the IDF-East disposal barrier under the Waste Management alternative that includes Tank Closure Alternative 2A waste with those under Tank Closure Alternative 2B, it indicates that ILAW glass has similar potential impacts, both short- and long-term, to ILAW glass without technetium-99. The analysis further indicates that removal of technetium-99 and its disposal

Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

treatment process, which would help get one of the longer-lived radionuclides into the high-level glass.

Alternative 2B is not protective of the Columbia River; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 3A – Existing WTP Vitrification with Supplemental Treatment (Bulk Vitrification); Landfill Closure.

Alternative 3B – Existing WTP Vitrification with Supplemental Treatment (Cast Stone); Landfill Closure.

Alternative 3C – Existing WTP Vitrification with Supplemental Treatment (Steam Reforming); Landfill Closure.

None of these supplemental treatment technologies are demonstrated to be effective at safely immobilizing the waste once disposed in Hanford's soils. Bulk vitrification has been demonstrated to not meet the "good as glass" criteria for the final waste form. Cast stone as a waste form is greatly inferior to bulk vitrified waste. Steam reforming as a waste form is greatly inferior to bulk vitrified waste and cast stone. Two of the three alternatives also exclude technetium 99 from pre-treatment. All three of these options have complete landfill closure of the single-shell tank farms, which we have already indicated is not protective. DOE has also ruled out treating and sending some waste to the Waste Isolation Pilot Plant, which effectively eliminates these alternatives, as they were presented in the draft EIS, from further consideration.

Alternatives 3A, 3B, and 3C are not protective of the Columbia River; supplemental technologies are not protective because the waste form will not sufficiently hold the waste over time (fails the permanence criteria) and does not meet Tri-Party Agreement requirements for the quality of the final waste form; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 4 – Existing WTP Vitrification with Supplemental Treatment Technologies; Selective Clean Closure/Landfill Closure. This alternative calls for supplementing the WTP with a combination of cast stone and bulk vitrification, which we indicated above is not a protective form of treatment. This alternative also excludes technetium 99 from pre-treatment. The closure combination of mixing selective clean closure with landfill closure is the most reasonable closure alternative – although it would need to be based on actual conditions in the vadose zone within and beneath the various tank farms. The BX and SX tank farms may or may not be appropriate for clean closure. Certainly other tank farms would need clean or partial clean closure. DOE has also ruled out treating and sending some waste to the Waste Isolation Pilot Plant.

15-2 cont'd

off site as IHLW glass would provide little reduction in the concentrations of technetium-99 compared with disposal as ILAW glass at either the Core Zone Boundary or the Columbia River nearshore. This is because the release rate of technetium-99 from ILAW glass is much lower than that from other sources, such as ETF-generated secondary waste and tank closure secondary waste from WTP operations. Thus, technetium-99 removal under Tank Closure Alternative 2B would provide little benefit.

As for the removal of soil and tank ancillary equipment, the Preferred Alternative (see Chapter 2, Section 2.12) describes how the landfill closure can be implemented. Additional sensitivity analysis has been completed in Chapter 7, Section 7.5, that evaluates soil remediation. DOE received comments on the potential impacts of future remediation activities that are in various stages of planning (which, given the inherent uncertainty, were not included in the cumulative impacts analysis). In response, DOE performed a sensitivity analysis to evaluate the potential impacts if certain remediation activities were conducted at some of the more prominent waste sites on the Central Plateau and along the river corridor. In addition, Chapter 7, Section 7.1, describes the closure process related to the tank. In this section, DOE clarifies that, following completion of the mitigation action plan and before implementing any closure actions, DOE will develop a tank farm system closure plan that will be implemented for each of the waste management areas. The State of Washington "Dangerous Waste Regulations" (WAC 173-303) implement the Hazardous Waste Management Act of 1976, as amended. These regulations provide the requirements for decisionmaking regarding the cleanup and permitting of dangerous wastes. The regulations define the state closure standards for the owners and operators of all dangerous waste facilities (WAC 173-303-610(2)) and include references to requirements for tank systems (WAC 173-303-640). Requirements for a response to a leak or spill and unfit-for-use tank systems are also described (WAC 173-303-640(7)). The regulations describe specific requirements for closure of the tank system (WAC 173-303-640(8)(a) and (b)). This part of the regulations provides a requirement for DOE to "remove or decontaminate all wastes residues, contaminated soils, and structures and equipment contaminated with waste" for the tank system. If DOE "demonstrates that not all contaminated soils can be practically removed or decontaminated," then closure is required (WAC 173-303-640(7)). The closure plan will include a preliminary performance assessment. The plan will be reviewed to ensure regulatory compliance by Ecology and presented for public comment before approval as a permit

Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

Alternative 4 is not protective of the Columbia River; supplemental technologies are not acceptable because the waste form will not sufficiently hold the waste over time (fails the permanence criteria) and does not meet Tri-Party Agreement requirements for the quality of the final waste form; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 5 – Expanded WTP Vitrification with Supplemental Treatment Technologies; Landfill Closure. Tank waste retrieval to only 90 percent would leave an amount of waste within the tanks that would likely eventually cause significant adverse environmental impacts. This alternative also calls for use of cast stone and bulk vitrification, which we have already indicated would not sufficiently immobilize the waste for disposal in Hanford soils. This option also excludes technetium 99 from the pre-treatment process. We do support the idea of further exploring sulfate removal after pre-treatment to reduce the amount of vitrified low-activity waste. This alternative also includes landfill closure of the single-shell tank farms, which we have indicated is not protective. DOE has also ruled out treating and sending some waste to the Waste Isolation Pilot Plant.

Alternative 5 is not protective of the Columbia River; supplemental technologies are not acceptable because the waste form will not sufficiently hold the waste over time (fails the permanence criteria) and does not meet Tri-Party Agreement requirements for the quality of the final waste form; natural resource injury liabilities are not minimized; and this alternative is not protective of human health and the environment.

Alternative 6A – All Vitrification/No Separations; Clean Closure. The WTP is currently being constructed to include pre-treatment and LAW vitrification melters. We support pre-treatment to separate the waste streams and believe it is unnecessary to treat all the waste as high-level waste. It also would unnecessarily prolong the treatment mission to 2163, requiring eventual replacement of the double-shell tanks and construction of two replacement Waste Treatment Plants. We also believe that clean closure of all of the 149 single-shell tanks is probably not necessary.

Alternative 6A may offer the best long-term protectiveness of the Columbia River over any of the other alternatives as all the tank waste is vitrified and disposed off-site. However, the increased time to vitrify all the wastes increases the chances of additional tank leaks during the treatment mission, which could pose an increased threat to the Columbia River and would not be protective of human health and the environment. It also does not comply with Tri-Party Agreement schedules.

15-2 cont'd

modification to the Hanford sitewide permit. This process is described in Appendix I of the TPA. A closure plan will be submitted for each waste management area that meets the TPA compliance schedule and requirements, as well as those of the state closure standards (WAC 173-303-610(2)) and the *TC & WM EIS* ROD. Ecology will consider all EIS mitigation information and any additional, relevant information when developing the closure plan. As an example of the current process, the TPA has milestones for the completion of a soil investigation for Waste Management Area C (Milestone M-45-61), submittal of a closure plan (Milestone M-45-82), and completion of Waste Management Area C closure (Milestone M-45-83). DOE will complete the soil investigation to determine the nature and extent of the contamination. To inform the decision process for closure, DOE will complete a Waste Management Area C performance assessment and risk assessment. Following completion of the tank waste retrieval and data collection activities for residuals in the pipelines, ancillary equipment, and soil, the performance assessment will be revised to include all data. This revised performance assessment and closure plan will be presented for public review and comment, and the Waste Management Area C closure plan will be modified and incorporated into the Hanford sitewide permit.

Tank Closure Alternatives 3A, 3B, and 3C -- NEPA is completed early in the process and therefore information can develop during the process. Appendix E of this EIS describes the uncertainties related to all of the supplemental treatment technologies. In addition, Appendix E, Section E.1.2.3.5.1, describes the process used for the supplemental treatment technologies evaluated in this EIS.

Tank Closure Alternative 4 -- In 2003, during the scoping of the "Tank Closure EIS," Alternative 4 was included to represent selective clean closure of the BX and SX tank farms as representative tank farms with landfill closure applied to other tank farms. The rationale for selection of BX and SX is included in Appendix E, Section E.1.2.5.3. Under the treatment component of Tank Closure Alternative 4, DOE wanted to evaluate the impacts related to the implementation of more than one supplemental treatment technology (i.e., bulk vitrification and cast stone).

Tank Closure Alternative 5 – Tank Closure Alternative 5 evaluates whether putting a more robust barrier (i.e., Hanford barrier) on the tank farms can mitigate the impact of not being able to retrieve all the waste from the tanks (i.e., 90 percent retrieval of the waste). In addition, the analysis of 90 percent removal of the tank farm waste evaluates the potential impacts if the TPA retrieval goal of 99 percent cannot be met. Similar to Tank Closure Alternative 4,

Commentor No. 15 (cont'd): Ken Niles, Assistant Director, Oregon Department of Energy

Alternative 6B – All Vitrification with Separations; Clean Closure. This alternative may meet all of our criteria. It would depend in large part on the ultimate disposition of the immobilized LAW canisters. Since there would not be pre-treatment to ensure that the technetium 99 ended up in the immobilized high-level glass, if the immobilized LAW were to end up in shallow burial at Hanford, the disposal environment may not sufficiently contain the technetium. This could eventually lead to spread of technetium into Hanford's groundwater. In addition, this alternative presumes landfill barrier of the cribs and trenches, which may not be protective. This alternative also proposes complete clean closure of all of the 149 single-shell tanks, which is probably not necessary.

Alternative 6B may meet all of our criteria, but not if the technetium ends up in shallow burial at Hanford.

15-2 cont'd

Alternative 6C – All Vitrification with Separations; Landfill Closure. This alternative includes landfill closure of the single-shell tank farms, which we have indicated is not protective.

Alternative 6C is not protective of the Columbia River and is not protective of human health and the environment.

DOE chose to evaluate a suite of supplemental technologies for potential implementation. DOE also believes evaluation of technologies like sulfate removal, which reduces the amount of ILAW glass produced in the WTP and, therefore, allows earlier completion of treatment of tank waste, is a reasonable alternative and meets the agencies' objectives.

Tank Closure Alternative 6A – DOE notes the commentor's support for pretreatment of the waste into the HLW and LAW fractions.

Tank Closure Alternative 6B – DOE notes the commentor's support for Tank Closure Alternative 6B.

Tank Closure Alternative 6C – DOE notes the commentor's opposition to Tank Closure Alternative 6C.

Commentor No. 16: Valerie Shubert

From: Valerie Shubert [treraia@gmail.com]
Sent: Thursday, January 21, 2010 5:31 AM
To: tc&wmeis@saic.com
Subject: Draft TC&WM EIS Comments; pt 1

This is very preliminary, since I'm still slogging through the EIS, but I wanted to get started while things were still fresh in my mind.

First, I don't think the comment period is long enough. This is a large document, and there's not time to read the whole thing with attention. *16-1*

Second, I note that there's an assumption that workers will be working the same type of schedules during clean closure operations as they would be during landfill closure operations. I think it would be worth considering hiring more people, and setting up the same sort of team planning and choreography that NASA uses for spacewalks. In this way, individuals would be exposed for less time, while their expertise and experience could be shared with others. *16-2*

Third, as regards vitrification: It should be noted that glass is a supercooled liquid, and over time it flows. In glass windows over a hundred years old, the glass at the bottom is measurably thicker than the glass at the top. When glass contains materials which will be dangerous for thousands of years, there needs to be some facility for (at least), turning the things over every hundred years or so, lest the thickening at the bottom become severe enough that it may break out of any containers. *16-3*

There will be more comments later, but this is the beginning. Please send any reply to this email address, as my SCN address has limited storage space.

Valerie Shubert
1420 Western, #409
Seattle, WA 98101

16-1 DOE extended the *Draft TC & WM EIS* public comment period for another 45 days, for a total comment period of 185 days.

16-2 Appendix K provides information regarding the assumptions for determining worker exposures and notes that they are based on full-time equivalent workers; the actual number of workers engaged to implement an action could be different. As stated in Appendix K, Section K.2, DOE and its contractors would implement controls to limit the exposure of individual workers for all activities in accordance with regulations and guidance (10 CFR 835; DOE Standard 1098-2008). Site procedures and job control plans would incorporate the type of planning and information sharing alluded to in the comment to maintain radiation doses as low as is reasonably achievable (ALARA), using techniques such as planning work to reduce time of exposure, increasing the number of workers, using shielding, and employing remote operations. Chapter 7, Section 7.1.10, contains additional information regarding methods to protect workers.

16-3 Vitrification of radioactive waste into glass is an attractive and technically proven option because it atomistically bonds the species in a solid glassy matrix. Because radioactive constituents are bonded within the glass structure, the waste forms produced are very durable and environmentally stable over long time durations; however, they remain toxic. EPA has declared vitrification the best-demonstrated available technology for HLW disposal.

Commentor No. 17: Mike Conlan

From: Mike Conlan [mikeconlan@hotmail.com]
Sent: Friday, January 22, 2010 3:19 PM
To: tc&wmeis@saic.com
Subject: Comment Draft Closure & WMEIS for the Hanford Site

D.O.E.:

1) 99.9 retrieval rate of tank waste! *17-1*

Clean the area as clean as scientifically possible, allow no further radioactive debris in Hanford until the area is clean, and the Hanford facility has the capability to clean any waste that is brought to WA. *17-2*

Mike Conlan
Redmond WA

17-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

17-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 18: Tom A. Williams

From: Tom Williams [wdhr@bmi.net]
Sent: Sunday, January 24, 2010 4:06 PM
To: tc&wmeis@saic.com
Subject: Written Comments for January 26, 2010 Hearing.

Mary Beth Burandt, NEPA Document Manager
U.S Department of Energy, Office of River Protection.

Please ad my comments to the record for the hearing on the Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland Washington.

The Columbia River is the lifeblood of the Pacific Northwest. Assuring its health is a high duty. Every effort should be made to contain and remediate contaminants on the Hanford Reservation from polluting the Columbia River. It should be recognized that preemptively acting on this contamination before it is widely dispersed is more cost effective than doing so after it is spread out. Containing radioactive contamination still in buried steel drums is easier than containing this contamination in the ground water. And containing contamination that has reached the ground water, but that is not yet widely dispersed is less costly to remediate than when it is further dispersed. Thus to meet safe clean-water standards and to do so cost effectively, it is necessary to properly do this work now, sooner rather than later, before significantly more dispersion occurs. *18-1*

This is a health safety issue and an economic issue. The Reservation's original mission provided for our national defense. This mission must now be continued to protect our citizens from the after effects of this mission and it must be done quickly to control total remediation costs.

Respectfully Submitted,

Tom A. Williams

18-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 19: Larry Gadbois, U.S. Environmental Protection Agency

From: Gadbois.Larry@epamail.epa.gov
Sent: Monday, January 25, 2010 11:51 AM
To: Mary_E_Burandt@RL.gov; tc&wmeis@saic.com
Subject: EIS Question

Can someone please define "where necessary" as used in the EIS?
See below for more information. Thanks.

--Larry—

----- Forwarded by Larry Gadbois/R10/USEPA/US on 01/25/2010 08:43 AM-----

From: Larry Gadbois/R10/USEPA/US
To: "Burandt, Mary E" <Mary_E_Burandt@RL.gov>
Date: 01/13/2010 08:17 AM
Subject: Re: Copy of the EPA presentation

Thanks for providing support to EPA during our review of the EIS.
I have one question which I have searched and searched for the answer and can't find it. Maybe you or someone on your team can help.

In multiple places in the EIS where clean closure of the tanks are discussed, it states that "Where necessary, deep soil excavation would also be conducted to remove contamination plumes within the soil column."

I can't find the criteria which trigger "where necessary."

I'd guess it means something like when contamination is greater than some concentration but I can't find that definition/threshold.

Can you tell me, where this this is detailed?

To get to the core of one of the issues I am struggling with: *19-1*

I work on CERCLA cleanups. All our cleanup RODs which address soil cleanup have two sets of cleanup concentrations.

One set, which applies to the top 15 feet of the vadose, is set at concentrations which protect for direct exposure to humans and eco receptors. The other set of cleanup numbers is designed to protect groundwater to MCLs and surface water quality standards when the groundwater reaches the Columbia River. That is mandated by the first two criteria of a CERCLA action, i.e. #1 protect human health and the environment, and #2 comply with ARARs (laws/regulations). So when I read "where necessary" I can't help operate from my framework of "necessary to protect groundwater to ARARs like MCLs", but I can't find an explanation anything like that in this huge document. Hoping you can help.....

Thanks Mary Beth.
--Larry Gadbois--

19-1 Not all of the HLW tanks have leaked or have suspected plumes; therefore, deep soil excavation would be done only where plumes have occurred and clean closure is necessary. This is the meaning of the term "where necessary" in the sentence "Where necessary, deep soil excavation would be conducted to remove contamination plumes within the soil column." The definition of "clean closure" is provided in this *TC & WM EIS* in Chapter 9, "Glossary," and in a text box in Chapter 2. The tank farms are regulated under RCRA, so the RCRA definition for "clean closure" is used, as defined in Chapter 9 as follows: "clean closure – The premise of clean closure is that all hazardous waste has been removed from a given RCRA-regulated unit and any releases at or from the unit have been remediated so that further regulatory control under RCRA Subtitle C is not necessary to protect human health and the environment. Under State of Washington requirements (WAC 173-303-64) for closure of a tank system, the owner or operator must remove or decontaminate all waste residues, contaminated containment system components (e.g., liners), contaminated soils, and structures and equipment contaminated with waste and must manage them as dangerous waste as required."

Commentor No. 20: John Ritter

From: John Ritter [ritter@gorge.net]
Sent: Tuesday, January 26, 2010 8:53 AM
To: tc&wmeis@saic.com
Subject: Hanford

PLEASE, Do not allow Hanford to become a dumping spot for Nuclear waste..... *20-1*
It has been PROMISED for years to be cleaned -up. The Columbia flows into our Nation's greatest & largest National Scenic Area, THE COLUMBIA RIVER GORGE *20-2*
.....Please , let's clean this spot up, and preserve this beautiful area.

Sincerely, John Ritter, Hood River, Oregon

20-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

20-2 With respect to the Columbia River Gorge, none of the alternatives would impact the scenic aspect of the gorge or its status as a National Scenic Area.

Commentor Number 21 is not included in this Comment-Response Document because it is a duplicate of Commentor Number 15.

Commentor No. 22: Gary L. Troyer

PUBLIC COMMENT
January 26, 2010
Richland WA

Draft TC&WM EIS which includes FFTF Decommission Decision

The subject EIS recommendations do not properly address emerging information and needs of the nuclear energy industry. This is a requirement of an EIS in bringing forth new information to the process.

Today, we find that the US nuclear industry is still needing fast neutron spectrum research and development data. This was true when the Fast Flux Test Facility was stopped in mid program in 1992. The need for data has only gotten worse since then. On a daily basis we are seeing the US private sector being driven overseas to gather information and embark on new innovations in those countries. Disallowing encouragement and internal use makes for a long term loss of technology advantage and employment.

Over time, several private and joint private/government proposals have been made for utilizing the FFTF. All have been stopped for other than technical merit. It seems wholly logical that based on US DOE actions, this property is excess. As such, the private sector or local government entities should be encouraged to have first option on its future. This alternative is not addressed in the EIS. *22-1*

The recent dropping of activation funding for Yuca Mtn makes fast reactor research important. It is becoming more evident with this new direction that such is necessary fully utilizing this treasure trove of clean energy. If allowed, the FFTF fits this need.

Finally, due to our lackadaisical attitude and desire to unilaterally control proliferation, we have emasculated a key ability to provide medical isotopes used extensively in the US. Avoidance of using HEU for making the medical isotope ^{99m}Tc has not stopped proliferation. It has merely caused loss of availability, generating less efficient methods that require new development. Our reliance on foreign support is now hampering the medical profession and public health. The FFTF has huge potential to resolve these needs and has been proposed many times in that role.

As Energy Secretary Chu has stated regarding nuclear energy, we need to preserve this resource "… to provide options for future policymakers."

Sincerely

Gary L. Troyer
614 Cottonwood
Richland WA 99352
[redacted]

22-1 DOE issued a ROD (66 FR 7877; January 26, 2001) for the *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 (Nuclear Infrastructure PEIS)* (*NI PEIS*) (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated. As discussed in Chapter 1 of this *TC & WM EIS*, Section 1.4.2, Decisions Not to Be Made, DOE is not considering restarting FFTF. The scope of this EIS is to address the final decommissioning of FFTF.

Commentor No. 23: Claude L. Oliver

US DOE FFTF Decommission Hearings
Richland, Washington January 26, 2010

UNITED STATES DOE POLICY STEEPED IN "POLITICS" COSTING BILLIONS FOR TAX PAYERS AND UTILIITES and THOUSANDS OF JOBS GOING OVERSEAS

Testimony By Claude L. Oliver
Former Benton County Commissioner

One of the true regrets of my 30 years of public service for the people of Benton County, is the continued action by the United States Department of Energy to destroy the Fast Flux Test Facility (FFTF) and now abandonment of Yucca Mountain in Nevada with out compliance of Federal National Environmental Protection Law. Both FFTF and Yucca Mountain are technically connected and will cost tax payers, States, US DOE host communities and utilities billions for decisions that are currently steeped in "politics" rather than science.

President Bill Clinton's Energy Secretary Bill Richardson on the last day of the Administration signed off on the Record of Decision for the Fast Flux Test Facility establishing a decision of "permanent deactivation" of the fast flux. Mind you, this decision was steeped in anti-nuclear politics with nearly all world scientists in the nuclear field offering shocked concern that nuclear science had been ignored at the expense of the worlds most capable and newest multi billion dollar fast test reactor.

On June 5, 2002, a Blue Ribbon delegation coordinated by me with lead presentation from Dr. Alan Waltar the head of Texas A & M Nuclear Science Department along with Entergy Corporation made presentation to the President George Bush White House. Among group accomplishments, Entergy Corporation, had just the day before, received the most prestigious recognition, the "Thomas Edison Award", for being the nations best nuclear power provider. The case based on real science was made with superlatives to the White House.

Quick reaction by the George Bush Administration was determined through a July 15, 2002, Under Secretary of Energy Kyle McSlarrow communication to the United States Department of Energy, Richland Operation (RL). Mr. McSlarrow wrote that Secretary of Energy had directed him to advise RL to proceed with "immediate decommission destruction" of the multi-billion dollar fast flux test facility.

Strange, under freedom of information it was discovered that no such authority detailed in the July 15 US DOE HQ memo had been officially given by Bush Energy Secretary Spencer Abraham to start the destruction of US DOE, FFTF. As one might expect, Richland DOE contractor Flour Hanford immediately hired Cleg Crawford under CERCLA contract to carry out the illegal McSlarrow July 15, 2002, destruct memo. Crawford had a trade reputation of getting the job done and if anyone got in his way they would be sorry.

US DOE repeatedly failed to embrace the spirit of the NEPA EIS process instead choosing the CERCLA environmental process followed by it's contractor Flour. CERCLA is intended to be used in an environmental disaster like Exxon Valdez spilling hundreds of thousands of barrels of oil. Due to the urgency of the environmental disaster, the federal agency in lead is not required to obtain any public input or factor any new critical information in the decision making process, thus going CERCLA. Clearly, US DOE HQ by following CERCLA violated the National Environmental Policy Law. that would have open the door for Nuclear

Tuesday, January 26, 2010 AOL: ClaudeOliver

23-1

23-1 DOE issued a ROD (66 FR 7877; January 26, 2001) for the *NI PEIS* (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated. As discussed in Chapter 1 of this *TC & WM EIS*, Section 1.4.2, Decisions Not to Be Made, DOE is not considering restarting FFTF. The scope of this *TC & WM EIS* is to address the final decommissioning of FFTF.

Commentor No. 23 (cont'd): Claude L. Oliver

scientists, the public and the energy research development to express issues needing address by the United States DOE and others.

It was obvious, by the fall of 2002, that the Bush administration was Hell bent to destroy the Washington State facilities with active support from Washington State's two Democrat US Senators, Patty Murray, Maria Cantwell, plus all members of the Washington Congressional Delegation and US Senator Ron Wyden from Oregon.

US DOE ignored responsibility under the National Environmental Policy Act and with all the political help and guidance it needed, drew up the largest small business award contract in the history of the US Department of Energy to expedite destruction of the Fast Flux Test Facility. So what about Federal NEPA law?

Nuclear scientists and the people of Benton County, Washington State watched as no federal elected officials came to their aid as the Flour Hanford Contractor proceeded with advancing the Fast Flux tear down project. So in desperation, Benton County took the United States Department of Energy to Federal Court in November 2002, with Federal Judge Edward F.Shea presiding.

Washington State's US DOE FFTF decommission process under CERCLA pretense was a clear violation of National Environmental Policy Law designed to leave Nuclear scientists, the public and the energy research development needs of the United States out of consideration by US DOE and our federal elected officials.Federal Judge Edward F. Shea's February 28, 2003, ruled that,

"Prior to committing any resources to any one of the options for decommissioning, the DOE must prepare an EIS. {NEPA} 40 CFR 1502.2 (f). This ensures the opportunity for public comment."

Even with Judge Shea's ruling the people of Benton County were ignored as US DOE and it's elected federal officials issued CERCLA contract B-294910 for FFTF tear down was issued in early 2005. On August 31, 2005, I asked federal regulators, Government Accounting Office and US DOE Inspector General, to review what Contract Issue authority US DOE had to issued the FFTF tear down procurement contract B-294910 valued at $260 Million dollars. Result - US DOE lacked authority and the contract was withdrawn. (Attachment #1)

US DOE's willful disregard of Federal Judge Shea's ruling was truly one of the low points of my public service career only surpassed by our elected Senators and Congressman watching with apparent approval. Sad commentary, Benton and Franklin County jails are full of citizens with no real violation of law that compared to what US DOE and our Federal Representatives have done to advance destruction of this incredible United States energy resource capability.

As the Obama Administration rushes to destroy the Washington State Fast Flux Test Facility and abandon Yucca Mountain without required NEPA compliance, the United States will loose the near term nuclear fuels recycle demonstration capability that the FFTF, multi-billion dollar complex, offers which could preclude the very need for Yucca Mountain 10,000 year storage. The national impacts for President Obama's political decision are in the billions with glass vitrification from Hanford that was to go to Nevada being orphaned (See Attachment #2 Claude Oliver Energy Communities Alliance 8-18-09 letter).

Tuesday, January 26, 2010 AOL: ClaudeOliver

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Commentor No. 23 (cont'd): Claude L. Oliver

President Barack Obama stated on October 15, 2009, in New Orleans:

"There is no reason why technologically we can't employ nuclear energy in a safe and effective way. Japan does it and France does, and it doesn't have greenhouse gas emissions, so it would be stupid for us not to do that in a much more effective way." (Attachment #3)

So in closing, your answers are requested to the following unanswered issues that will be directly affected by the US DOE decision on the proposed FFTF decommission:

1. Do any of you know what President Barack Obama meant with his comment "that it would be stupid for us not to do that (employ nuclear energy) in a much more effective way." (Attachment #3)? If you do not, then what does President Obama's statement mean in the context of the US DOE current plan to do away with a vital FFTF nuclear R&D facility?

2. If President Obama is serious about his New Orleans, "employ nuclear energy" statement, does President Obama understands the need for nuclear research and development that the FFTF could do for the United States to advance his embrace of nuclear energy employment?

3. Why did US DOE ignore Federal Judge Shea's ruling to do the FFTF NEPA EIS public process to the point of defying US DOE's court statements given to Judge Shea that US DOE was only, "Planning to Plan" US DOE FFTF decommission which became the basis of Judge Shea's acceptance of the US DOE policy position; yet US DOE then proceed to issue US DOE procurement contract B-294910 prior to doing the required NEPA EIS public process ordered by Judge Shea? (ATTACHMENT #1)

4. How is US DOE complying with required NEPA EIS environmental impact issues by abandoning Yucca Mountain Nevada without consideration of FFTF for a nuclear fuels materials waste recycle demonstration that could offer major scientific mitigation plus time and cost savings for which US DOE has legal obligations to address for Washington State, host communities and commercial utilities of the United States (See attachments #2)?

Options for Re-start of Fast Flux Test Facility must immediately be explored in context of national energy policy decisions being faced by US DOE, President Obama, Washington State, Washington Congressional Delegation, Nevada, commercial utilities and host US DOE communities. Protracted delay of address of our nations critical nuclear energy options means we are rapidly declining from being the world's nuclear power R&D leader as all major industrial nations go forward; with thousands of good paying jobs being lost overseas.

Please provide answers to these questions as quickly as you can. Thank you.

Claude L. Oliver
Former Benton County Commissioner

Tuesday, January 26, 2010 AOL: ClaudeOliver

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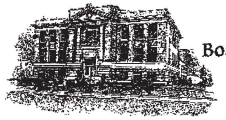
Commentor No. 23 (cont'd): Claude L. Oliver



Attachment #1

Board of County Commissioners
BENTON COUNTY
P.O. Box 190 • Prosser, WA 99350-0190
Phone (509) 786-5600 or (509) 736-3080
Fax (509) 786-5625

Claude L. Oliver
DISTRICT 3

August 31, 2005

Mr. David A. Ashen
Government Accountability Office
441 G. Street, N.W.
Washington DC

Mr. Gregory Friedman, Investigator General
US Department of Energy
Washington DC 20585

Determination of US DOE Authority to Contract the FFTF Closure Project,
Procurement B-294910

Mr. Ashen & Mr. Friedman

The Richland Office of the United States Department of Energy (US DOE RL) has publicly stated their intention to let a procurement contract for the teardown of the Fast Flux Test Facility and support facilities (FFTF) located at Richland, Washington. **Does US DOE-RL have legal authority for issuance of this contract? Your review is requested.**

The FFTF Closure Project was before U.S. District Court Judge Edward F. Shea in Benton County v. US DOE in November 2002. Judge Shea ruled on February 28, 2003. [CT-02-5100-EFS]

The FFTF Closure Project Plan was first issued in July 2002. This plan for Decontamination and Decommission of the FFTF to an entombment end-state, was to be performed in accordance with requirements of Superfund, Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA**). [Fluor Hanford, DE-AC06-96RL13200, Modification M172, page C-89, December 19, 2002]. This CERCLA plan was contested by Benton County as being beyond the scope of deactivation and outside of the authority the National Environmental Policy Act (NEPA). The authorizing NEPA FFTF documents are: 1995 Environmental Assessment (95EA/FONSI), and in the NEPA NI-PEIS Record of. Decision (Richardson ROD), January 19, 2001. [Fluor Hanford, DE-AC06-96RL13200, Modification M172, page C-89, December 19, 2002]

In response to the Benton County law suit, the US Justice Department; offered ***Exhibit D*** to Judge Shea. Exhibit D is a December 10, 2002, letter from US DOE Secretary Abraham to HHS Secretary Thompson which states, *"Regarding the Fast Flux Test Facility, the Department considered the possibility of restarting this reactor to help meet future medical isotope needs. However, after an exhaustive review, we concluded that the only proposal made to us to restart the facility was not viable* ***and have therefore decided to proceed with the permanent deactivation of this facility…"***

In the Shea ORDER, *"The DOE acknowledges that it will have to prepare an EIS prior to deciding on a decommission plan. 10 CFR Pt. 1021 (d) App. D (d) (4). As of yet, DOE has not decided what the "end state" for the FFTF facility should be. The DOE personnel communications the County has pointed to is evidence that the DOE is only currently engaging in planning, and that no final decommissioning approach has been selected.* ***Prior to committing any resources*** *to any one of the options for decommissioning, the* ***DOE must prepare an EIS.*** [NEPA] *40 CFR 1502.2 (f). This ensures the opportunity for public comment. Upon completion of the EIS, DOE will have made a final decision on decommissioning that can be the subject of a lawsuit seeking court review."* [ORDER, p.14, line 2-12]

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Commentor No. 23 (cont'd): Claude L. Oliver

Judge Shea upheld the deactivation authority in the 1995 Environmental Assessment (95EA/FONSI), and in the NI-PEIS Record of Decision (Richardson ROD), January 19, 2001. *"... this PEIS incorporated the 1995 EA concerning deactivation by reference, and stated that decommissioning was not addressed due to the uncertainty regarding the timing of such action and that an EIS would be completed prior to decommissioning.* [ORDER, p.3, line 22-25].

*"The Court finds that both deactivation and decommissioning have independent utility. Deactivation's independent utility is placing the FFTF into a radiologically and industrially safe shutdown condition suitable for long-term surveillance and maintenance before final decontamination and decommissioning. **This would allow the DOE to save approximately 30 million dollars per year.** Decommissioning's independent utility is the ability to remove the FFTF from service and ensure that no long-term unacceptable risks exist to persons or the environment. As a result, the Court finds that it is not "unwise" or "irrational" to undertake deactivation without decommissioning until five, ten, thirty years, or never, given the financial savings of deactivating the FFTF..."* [ORDER, p. 11, line 9-22]

On August 13, 2004, US DOE published in the Federal Register, a Notice to prepare an EIS for the Proposed Decommission of the FFTF (DOE/EIS-0364). Public Scoping meetings were held where oral and written comments were taken. Spring 2005 was the estimated issuance date of the Draft EIS. This schedule has now been "pushed" more that one year, now **expecting a completion date of December 2006.**

Procurement Rule 216 dictates that a contract cannot be awarded prior to the completion of the EIS and ROD. Any FFTF Closure Project contract must await completion of the NEPA EIS with a signed Secretarial Record of Decision. [Sec. 1021.216].

Washington State Department of Ecology and the US Environmental Protection Agency wrote letter, January 19, 2005,[2] *"Competing demands for increasingly scarce cleanup resources compel us to focus on those projects that have the greatest potential to address environmental risk; FFTF D&D is not one of those projects."* Why is this disputed procurement with questionable authority still going forward?

The FFTF Closure Project procurement contract, anticipated to be awarded, appears to be in violation of Judge Shea's ruling, 2-28-03. It appears that DOE's attempt to ignore Judge Shea's ruling should be stopped. Please review this concern, and provide your determinations.

Very truly yours,

Claude L. Oliver
Benton County Commissioner

cc: Andy Miller, Benton County Prosecuting Attorney
Michael A Wilson, NWP, Ecology
Nicholas Ceto, Hanford Project Office, EPA

Attachments:
1. Exhibit D. Letter, Secretary Abraham to HHS Thompson, December 10, 2002.
2. Ecology and EPA Joint Letter, January 19, 2005.

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Commentor No. 23 (cont'd): Claude L. Oliver

Attachment # 1-A

THE SECRETARY OF HEALTH AND HUMAN SERVICES
WASHINGTON, D.C. 20201

OCT 0 8 2002

The Honorable Spencer Abraham
Secretary of Energy
Washington, D.C. 20585

Dear Secretary Abraham:

I am writing to follow up on our recent exchange of correspondence concerning the Department of Energy (DOE) isotope production program. Your letter informed the Department of Health and Human Services that under your new policy, DOE will no longer subsidize production of isotopes. In response, I asked the Director of the National Institutes of Health, Elias Zerhouni, M.D., to undertake a full assessment of the impact of these changes on high-priority research initiatives. Dr. Zerhouni's staff has been working with Mr. William D. Magwood, IV on your staff to complete this assessment.

While our staffs are working toward ensuring that radioisotopes will be available for research purposes, I remain concerned that there may be insufficient quantities of radioisotopes for treatment and diagnostic purposes in the larger community. It was brought to my attention that the demand for medical isotopes may exceed the supply in the near future. As I understand it, as much as 90 percent of approved medical isotopes used in the United States are produced abroad, primarily in Canada, but also in Europe (including Russia), Israel, and South Africa. In addition, many U.S. radiopharmaceutical firms are owned by foreign parent companies. Thus, the United States may be unduly dependent on radioisotopes produced overseas. The U.S. medical radioisotope supply depends on production that we cannot control, and we cannot assure that radioisotopes can be reliably and securely imported.

Nuclear medicine has become a prominent modality and is certain to increase in use in future years as additional diagnostic and treatment uses are created. I understand that shortages of radioisotopes have occurred in the recent past. I am aware of and encouraged by DOE's recently announced initiative to convert uranium stored at Oak Ridge National Laboratory to medical isotopes for use in cancer research. I am also aware that DOE is currently considering a proposal by the Community ReUse Agency (CRA) to redeploy the Fast Flux Test Facility at Hanford. The CRA plan includes production of radioisotopes for research and medical diagnostic and treatment purposes. The Department of Health and Human Services is not in a position to make a judgement on the technical merits and economic feasibility of the CRA proposal; but given that one of its intentions is to increase the supply of radioisotopes for medical treatment and reduce the nation's dependence on foreign sources, I ask you to give the proposal every consideration.

Sincerely,

Tommy G. Thompson

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Commentor No. 23 (cont'd): Claude L. Oliver

Attachment # 1-B

BUSINESS

Supply Woes Hit Isotopes Sector

Article Comments

Save This

JON KAMP

Overlapping reactor outages will soon rattle the supply chain for medical-scanning isotopes, causing fresh headaches for patients, doctors and companies that have dealt with repeated shortages in recent years.

This time, companies including Cardinal Health Inc. and Covidien PLC say advanced warning about a key coming plant outage helped them prepare. But the isotopes' very short lifespan means no one can stockpile supplies, and more than half the world's production capacity will be shuttered for about a month starting in mid-February.

Covidien told customers in a recent letter that it is using a "multifaceted" approach, but that "periods of significant shortages will still occur."

One of the top producers of material used to make isotopes, a reactor in Canada, has been sidelined since last May to fix a heavy-water leak, and the latest estimate is for a return by late March.

That is delayed from earlier estimates, which means the outage will overlap with a planned maintenance shutdown at the other major producer, in the Netherlands, which is slated to begin Feb. 19 and last six months.

The reactors produce material called molybdenum-99 that decays into technetium-99m, which is the world's most commonly used medical isotope.It is frequently used in scans to check for heart problems and cancer; there are an estimated 20 million nuclear medicine procedures in the U.S. each year.

The Canadian and Dutch plants are crucial global suppliers and particularly important for the U.S., where they are used to make nearly all isotopes. But both aging facilities have had issues and outages in recent years that have forced the industry to scramble for alternatives.

The supply chain is complex. In North America, MDS Inc.'s Nordion unit performs additional processing of material from the Canadian facility and then two companies—Covidien and privately held Lantheus Medical Imaging—make generators that produce the medical isotope.

These are distributed to hospitals and through radiopharmacies, where Cardinal has the biggest business.

Covidien, which gets most resources from the Dutch plant, is managing the looming shortfall by readying supplies of thallium, which is an older isotope used in heart scans; tapping molybdenum from other European reactors; and working with customers on efficiently using the isotopes they have.

The company announced plans last month to sell its radiopharmacy business to Triad Isotopes, Inc. for undisclosed terms in a deal expected to close in the second quarter.

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Commentor No. 23 (cont'd): Claude L. Oliver

12/17/2002 16:09 2025863274 SEC-SEC PAGE 03/

(Attach. # 10)

The Secretary of Energy
Washington, DC 20585

December 10, 2002

2002-017662

The Honorable Tommy G. Thompson
Secretary of Health and Human Services
Washington, D.C. 20201

Dear Secretary Thompson:

Thank you for your continued interest in isotope availability. I am confident that Dr. Elias Zerhouni and Mr. William D. Magwood, IV and their respective staffs will come to a timely completion of their assessment of the impact of policy and funding changes on the availability of isotopes to support important research activities.

I am concerned about the future availability of radionuclides needed for treatment and diagnostic purposes. For this reason, the Department of Energy is committed to assuring the maintenance of a viable U.S. capability to produce important research isotopes. As an example, we are investing in a new Isotope Production Facility, a new production capability at the Los Alamos Neutron Science Center that will enable near year-round production of a range of short-lived isotopes vital to many research efforts. The Isotope Production Facility will be operational in late 2003. In addition, a conceptual design has been developed for a new 70 million electron volt cyclotron dedicated to the production of many important medical isotopes. These activities, together with ongoing production of isotopes at research reactors operated by the Department and various universities will enable key medical research to continue.

The Department is not in a position to support commercial-scale production of future isotopes. We will continue to make our facilities available for private sector production initiatives and will continue our work with overseas producers to make their isotopes available for use in the United States. We believe that as successful research reveals the need for future isotopes, the private sector will be able to respond to the Nation's requirements.

Regarding the Fast Flux Test Facility, the Department considered the possibility of restarting this reactor to help meet future medical isotope needs. However, after an exhaustive review, we concluded that the only proposal made to us to restart the facility was not viable and have therefore decided to proceed with the permanent deactivation of this facility. In addition, to support this facility for commercial isotope production is inconsistent with the Department's

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EXHIBIT
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Commentor No. 23 (cont'd): Claude L. Oliver

position. Work is now underway to permanently shut down the Fast Flux Test Facility, and we do not expect to revisit this issue in the future.

The assessments being conducted by our organizations will serve as a basis for future investments by the Department in facilities to meet research isotope requirements. The Department will maintain an enduring role in the production and distribution of isotopes needed to support important research into advanced diagnostic and therapeutic procedures. We welcome continued collaboration with the National Institutes of Health on this effort.

Please feel free to contact me or have a member of your staff contact Mr. William D. Magwood, IV, Director of the Office of Nuclear Energy, Science and Technology, at 202-586-6630 to discuss any of these items.

Sincerely,

Spencer Abraham

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Commentor No. 23 (cont'd): Claude L. Oliver

(Attach #1)

Central Files _____
File Name: _____
Cross Reference: _____

WASHINGTON STATE DEPARTMENT OF ECOLOGY

EPA

January 19, 2005

Keith A. Klein, Manager
Richland Operations Office
U.S. Department of Energy
PO Box 550, MS A7-50
Richland, Washington 99352

Dear Mr. Klein: Keith

Re: Fast Flux Test Facility (FFTF) Decommissioning

The purpose of this letter it to ask you to consider deferring portions of the Fast Flux Test Facility Decommissioning and Demolition (D&D) project until after higher priority cleanup projects at Hanford have been completed. While we support defueling, removal of liquid sodium, and other actions required to place the facility in a min-safe configuration, the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) believe that it may be appropriate to defer final D&D actions, given the reality of increasingly tight cleanup budgets at Hanford. We were recently briefed by your staff on the final FY 2005 budget; it is increasingly apparent to us that budgets are tight and will get tighter. We understand that in 2006, resources devoted to cleanup at Hanford are anticipated to decrease from 2005 levels.

Competing demands for increasingly scarce cleanup resources compel us to focus on those projects that have the greatest potential to address environmental risk; FFTF D&D is not one of those projects. The $45,714,000 FY 2005 budget allocation for FFTF represents a significant portion of the Hanford EM cleanup budget. It is our view that FFTF work should proceed only until it can be placed in a min-safe configuration, at which point those funds projected to support FFTF D&D should be shifted to higher priority cleanup projects.

We look forward to discussing this proposal with you at your earliest convenience.

Sincerely,

Michael A. Wilson,
NWP, Program Manager

Nicholas Ceto, Program Manager
Hanford Project Office

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Commentor No. 23 (cont'd): Claude L. Oliver

ATTACHMENT #2

Subj: **(no subject)**
Date: 1/26/2010 3:59:16 A.M. Pacific Standard Time
From: ClaudeOliver@aol.com
To: claudeoliver@aol.com

Sent: Tue, Aug 18, 2009 4:31 pm
Subject: Political Decision to drop Yucca Mountain requires NEPA analysis

Mr. Seth Kirshenberg, Executive Director
Energy Communities Alliance
Washington, DC 20036-4374

Dear Seth:
Do you know how folks around the various sites are accepting President Barack Obama's decision to abandon Yucca Mountain long term nuclear materials storage option without any National Environmental Policy Act (NEPA) compliance supplement being factored by the United States Department of Energy? While we all can respect that President Obama can make such a decision, we also as a Nation must pay for each decision that our President makes. The decision to abandon Yucca Mountain has billions of dollars of additional costs and significant environmental impacts to the federal government that have yet to be evaluated.

From a scientific point of view, I strongly believe that 25 years ago the US DOE decision on long term storage at Yucca Mountain without a national reprocess waste reduction option was impractical. Aside from nuclear science not being continued in this process, Yucca Mountain was the call of the day for highly radioactive waste long term storage. $15 Billion later we have a $15 Billion Dollar hole in the ground. Regardless of the outcome, we now have several decades of decisionmaking made by the US, States, local governments, Native American Tribes, utilities and rate payers that have paid for, planned and counted on that Yucca Mountain to be be open and accepting nuclear wastes. Areas that US DOE would have to evaluate before abandoning Yucca Mountain:

1. Large amounts of US Defense spent nuclear materials and fuels at US DOE sites across the Nation
2. Glass Logs from the Hanford Tank Waste Vilification Process sometime around 2020 that have no home
3. Spend Nuclear Fuel generated and temporarily stored at the 102 active Nuclear Utilities in the United States
4. Various State and Native compliance agreements that US DOE will violate if Yucca Mountain is not available
5. States' ratepayers have paid $ billions for waste disposition that is being lost.
6. Failure to accept the waste that they have title for and have collected money to handle.

In December 2002, nearly all arguments that our community posed successfully challenging the US DOE to do a National Environmental Policy Act (NEPA) compliance regarding the Fast Flux Test Facility deactivation or decommission process are the same for a Yucca Mountain challenge. I would greatly appreciate if you would poll our folks around the country to see what interest levels they might express to legally challenge US DOE to enforce NEPA compliance and do a NEPA Supplemental EIS before abandoning the Yucca Mountain long term storage option.

Very Best Regards,
Claude L. Oliver
Former Benton County Commissioner

Tuesday, January 26, 2010 America Online

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Commentor No. 23 (cont'd): Claude L. Oliver

ATTACHMENT # 2-A

Subj: **Pay Back Time - U.S. Court of Appeals - Nuclear Waste Fund**
Date: 1/25/2010 9:11:50 A.M. Pacific Standard Time
From: holdercarl@hotmail.com
To: claudeoliver@aol.com, tamaranoraholder@gmail.com

The federal government better get ready to start paying out billions to electric utilities across the country, judging by the recent court ruling favoring the Nebraska Public Power District.
It's only fair.
The ruling by the U.S. Court of Appeals for the federal circuit in Washington, D.C., struck down the federal government's excuse for not paying back $159 million NPPD gave the government over many years to build a permanent storage site for nuclear waste.
The federal government argued that delays in the 20-year process were unavoidable. Not so said the court.
The argument that the federal government was moving as fast as it could to build the site at Yucca Mountain, Nev., was always flimsy. Now it's preposterous. President Barack Obama effectively killed the project shortly after taking office.
Obama took the action despite a Department of Energy statement that "After over 20 years of research and billions of dollars of carefully planned and reviewed scientific fieldwork, the (DOE) has found that a repository at Yucca Mountain brings together the location, natural barriers and design elements most likely to protect the health and safety of the public, including those Americans living in the immediate vicinity, now and long into the future."
The Obama administration tried to dodge the possibility of repayment by not officially withdrawing the license application for the Yucca Mountain site. Instead it cut back funding to virtually nothing, bringing the project to a standstill.
Theoretically the government should have no problem repaying the money, since it ostensibly had been placed in a Nuclear Waste Fund with a purported balance of $22 billion.
But as the U.S. Chamber of Commerce noted in a report last year, "The NWF is largely a budgetary gimmick."
The chamber said, "It is a widely known secret that there really is not an account at the Treasury Department with $22 billion waiting to be spent on the project. Much like the country's Social Security program, the surplus collected annually is generally used for other purposes, namely to offset deficit spending."
Obama's decision to kill the project meant that more casks of nuclear waste were put in storage at Nebraska's Cooper Nuclear Station near Brownville and the Fort Calhoun Station near Omaha at considerable expense. Similar actions were taken at other nuclear power plants all around the country.
Given the federal government's failure to live up to its responsibility under the law to build a permanent storage site, it's a matter of simple justice that NPPD and other utilities be repaid. Ratepayers in Nebraska, who own their electric utilities, handed over the money in good faith. Now they should get it back.
The federal government better get ready to start paying out billions to electric utilities across the country, judging by the recent court ruling favoring the Nebraska Public Power District.
It's only fair.
The ruling by the U.S. Court of Appeals for the federal circuit in Washington, D.C., struck down the federal government's excuse for not paying back $159 million NPPD gave the government over many years to build a permanent storage site for nuclear waste.
The federal government argued that delays in the 20-year process were unavoidable. Not so said the court.
The argument that the federal government was moving as fast as it could to build the site at Yucca Mountain, Nev., was always flimsy. Now it's preposterous. President Barack Obama effectively killed the project shortly after taking office.
Obama took the action despite a Department of Energy statement that "After over 20 years of research and billions of dollars of carefully planned and reviewed scientific fieldwork, the (DOE) has found that a repository at Yucca Mountain brings together the location, natural barriers and design elements most likely to protect the health and safety of the public, including those Americans living in the immediate vicinity, now and long into the future."
The Obama administration tried to dodge the possibility of repayment by not officially withdrawing the license application for the Yucca Mountain site. Instead it cut back funding to virtually nothing, bringing the project to a standstill.

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Commentor No. 23 (cont'd): Claude L. Oliver

Theoretically the government should have no problem repaying the money, since it ostensibly had been placed in a Nuclear Waste Fund with a purported balance of $22 billion.
But as the U.S. Chamber of Commerce noted in a report last year, "The NWF is largely a budgetary gimmick."
The chamber said, "It is a widely known secret that there really is not an account at the Treasury Department with $22 billion waiting to be spent on the project. Much like the country's Social Security program, the surplus collected annually is generally used for other purposes, namely to offset deficit spending."
Obama's decision to kill the project meant that more casks of nuclear waste were put in storage at Nebraska's Cooper Nuclear Station near Brownville and the Fort Calhoun Station near Omaha at considerable expense. Similar actions were taken at other nuclear power plants all around the country.
Given the federal government's failure to live up to its responsibility under the law to build a permanent storage site, it's a matter of simple justice that NPPD and other utilities be repaid. Ratepayers in Nebraska, who own their electric utilities, handed over the money in good faith. Now they should get it back.

Monday, January 25, 2010 AOL: ClaudeOliver

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Commentor No. 23 (cont'd): Claude L. Oliver

ATTACHMENT #3

October 21, 2009
614 Cottonwood Drive
Richland WA 99352

The President of the United States
The White House
1600 Pennsylvania Avenue NW
Washington, DC 20500

Dear Mr. President

I could not agree more with your comments of October 15, 2009 in New Orleans:

> … "There's no reason why technologically we can't employ nuclear energy in a safe and effective way. Japan does it and France doesn't and it doesn't have greenhouse gas emissions, so it would be stupid for us not to do that in a much more effective way." …

The US has demonstrated many times that we can safely and effectively deploy nuclear energy. US nuclear energy has an industrial safety record better than office workers. Our policies on not reprocessing used fuel have been a failure related to proliferation issues; therefore it needs reversal like France and others. Such reversal will solve the used fuel inventory in relation to the Yucca Mountain repository. Energy production costs are better than coal. Reliability exceeds 90%, better than any other source except perhaps hydro. Let's get on with it!

But, we have a major impediment on enabling advanced designs. China has approved and is going forward with US designs while our NRC stalls. China has approved and is building fast spectrum reactor models based on Russian examples. Our needed testing programs formerly using our world class similar technology test reactor are shutdown. The next US designed and US patented fast reactor will likely be built and certified in China because of regulatory approval uncertainty. Our NRC needs to be renewed with advanced reactor talent and regulations revised in concert with what the rest of the world is accomplishing such as adoption of IAEA standards. Let's get on with it!

We are 30 years behind. But, we can do it.

Sincerely

Gary L. Troyer
Nuclear Chemist, retired
gary@kandg.org
509-946-3425

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Commentor No. 23 (cont'd): Claude L. Oliver

ATTACHMENT # 3A

THE WHITE HOUSE
WASHINGTON

December 9, 2009

Dear Friend:

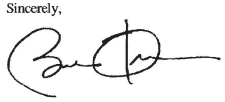
Thank you for writing me. I appreciate hearing from you, and I share the vision of millions of Americans who want to make our country the world leader in developing new sources of clean energy. This is a challenge that has gone unaddressed for too long, and it is time to take steps to create millions of clean energy jobs, move towards energy independence, and reduce pollution and the effects of global warming.

Together with Congress and private industries, we are making critical investments to grow an American clean energy economy and achieve energy independence. The American Recovery and Reinvestment Act puts Americans to work weatherizing homes and buildings, doubling our supply of renewable energy, and advancing scientific research in clean energy solutions. We are working to develop and deploy technologies like wind and solar power, advanced biofuels, clean coal, and more fuel-efficient cars and trucks built here in the United States. In addition, my Administration is pursuing comprehensive legislation to move toward energy independence and prevent the worst consequences of global warming, while creating incentives to make clean energy profitable in America.

Achieving these goals will require a sustained and shared effort by government, business labor, and your community. A sound energy policy is a long-term investment in our national security, economic prosperity, and natural inheritance.

Thank you again for writing. I encourage you to read more about my energy agenda and share your views at: www.whitehouse.gov/agenda/energy_and_environment. For more information on government grants, please visit e-center.doe.gov.

Sincerely,



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Commentor No. 23 (cont'd): Claude L. Oliver

ATTACHMENT 3-B

Subj: **US, India inch "closer to nuclear fuel reprocessing agreement"**
Date: 1/26/2010 3:01:51 A.M. Pacific Standard Time
From: ClaudeOliver@aol.com
To: claudeoliver@aol.com

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US, India inch 'closer to nuclear deal'

(AFP) – Nov 29, 2009

NEW DELHI — India and the United States are close to signing a nuclear fuel reprocessing agreement, one of the last requirements to finalise last year's landmark civilian nuclear deal, an official said Sunday.

Indian National Security Adviser M.K. Narayanan told reporters "we have arrived at almost the very last stage" of negotiations.

Narayanan was speaking on board Prime Minister Manmohan Singh's plane as he returned from a Commonwealth summit in Trinidad and Tobago.

The establishment of nuclear reprocessing facilities under International Atomic Energy Agency (IAEA) safeguards is a critical component of the implementation of the Indo-US nuclear deal, sealed in 2008 with former US president George W. Bush.

The agreement allows India access to civilian nuclear energy despite its refusal to sign the Non-Proliferation Treaty.

Singh said on an official visit to Washington last week that he was confident US President Barack Obama would "operationalise the nuclear deal as early as possible."

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AFP

Indian National Security Adviser M. K. Narayanan
Map

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Attachment # 3-C

Private capital awaits "long-term signal" on carbon – Chu

By Ben Geman - 11/29/09
The Hill Newspaper

A couple tidbits from Energy Secretary Steven Chu's appearance on C-SPAN's Newsmakers program that aired today:

Chu made the case that a U.S. greenhouse gas emissions cap will help bring private capital into energy projects.

The stimulus law and other recent policies are pouring billions in federal assistance into low-carbon technologies. But that's just part of the equation, Chu warned.

More certainty about future carbon policy will influence decisions about multi-billion dollar investments in projects expected to operate for 60 years or more, he said.

"That long-term signal is very important," Chu said. "There is a lot of capital right now staying on the sidelines, wanting to know what is the signal, what is it going to be."

Elsewhere, he said the "blue-ribbon" commission he is forming to explore long-term solutions to nuclear waste management will be announced soon.

The Obama administration has abandoned federal plans launched in the 1980s to build a high-level waste dump inside Yucca Mountain in Nevada. "We want this blue-ribbon panel to step back and make some reasonable assumptions about what do we know today that we didn't know 25 years ago," Chu said.

Overall, he sees a glass that's half-full when it comes to working with Congress. The administration and congressional Democrats face a major challenge to win 60 Senate votes for a climate and energy bill that includes an emissions cap.

"There are certain people who have just decided they are not going to come around, and so that is life. I am not so wildly optimistic that I think I can convince everyone," Chu said. But, he added, "A large bipartisan group is willing to listen."

He also surveyed the lay of the land internationally heading into the Copenhagen climate talks. Chu lauded what he calls China's growing recognition of threats from climate change, and increasing efforts to deploy renewable energy and efficient coal-fired power plants.

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Commentor No. 23 (cont'd): Claude L. Oliver

Attachment #3-D

Nevadans 4 Carbon-Free Energy (NV4CFE)
Founders of the Nevada Energy Trust Fund

Mission
Our mission is to enlighten Nevadans about the economic benefits of an energy park at Yucca Mt.

Our objective is to operate a nuclear repository, to research and develop carbon-free energy technologies, recycle spent fuel, and generate carbon-free power, all to the direct economic benefit of Nevadans.

Goals

- Develop the Yucca Energy Park that will store spent fuel at Yucca Mt.
- Develop a facility that will research and develop carbon-free energy technologies
- Charge for the storage of spent fuel
- Build a facility to recycle spent fuel to power a generation facility and sell to other facilities
- Create a trust fund that will provide direct financial benefit to Nevadans

Organizational Structure

Form a non-profit corporation that will operate Yucca Energy Park Contractors will operate the storage facility, the research facility, and power generation facility. Create a permanent trust fund, similar to Alaska, where the profits from the Energy Park will be paid directly to qualified Nevadans.

Background
Our idea is to form a non-profit corporation that would manage the Yucca Energy Park. It would not operate the repository, as that is a federal contract.

We envision forming a non-profit business entity that would develop the energy park and seek contractors to build a recycling facility and a power generation facility contiguous to the repository. The project is proposed as a commercialized operation under a non-profit entity, similar to what Claude Oliver is proposing at Hanford.

Revenue will come primarily from recycling of used nuclear fuels and revenue from electricity sales generated by the commercial scale. Since it seems likely that other recycling centers will be built in the country, we also see the sale of spent fuel to them as another income source.

The profits would be placed in a trust fund that will be distributed annually to qualified Nevadans, similar to Alaska. Creation of a trust fund will likely take State legislation.

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Commentor No. 24: John Swanson

From: JohnLSwanson@verizon.net
Sent: Thursday, January 28, 2010 11:34 AM
To: tc&wmeis@saic.com
Subject: Draft TC&WM EIS Comments
Attachments: EIS.docx

Here are some comments for you to consider and address. Hopefully, they will help to improve the final version.

John Swanson

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Commentor No. 24 (cont'd): John Swanson

1-28-10

Comments on

Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site

John L. Swanson
1318 Cottonwood Dr.
Richland, WA 99354
xxx-xxx-xxxx
JohnLSwanson@verizon.net

) These comments are based on my review of only the EIS Summary and Appendix E. I imagine that many of my comments apply to elsewhere in the EIS, as well – where the same subjects are being discussed.

) I have limited my review and comments to the area in which I have had some experience – which is in dealing with the tank wastes.

) No comments will be made here about the idea of disposing of some tank wastes at WIPP – in light of DOE's recent decision not to pursue that option.

) I think that this EIS should be modified so that it states "early and often" that the alternatives that are examined were selected to provide "bounding environmental results", and that the technologies that are included in the alternatives may well not be implemented even if the general alternative is implemented. While this fact is likely a "given" to the writers of the EIS, I don't believe that is obvious to the general public. By "early", I suggest that the concept should be clearly stated in Section S.1 (perhaps in the box on S-1?); by "often", I think it would be good to use a simple term (maybe "example technology", or "bounding technology", or ??; I see "representative technology" on E-37 [I like that]) throughout the report.

- There is a pretty good sentence on E-1 about this; "In many cases, those technologies were selected to provide bounding environmental consequences and do not necessarily represent the exact technologies or processes that could be implemented to achieve the desired outcome."
  - The paragraph in the middle of E-69 is also good in this regard.
- While I saw the term "representative technology" on E-37, that's one of the few places that I saw it; it would have been beneficial to use it many times in this appendix.

1

24-1

24-1 The following paragraph was added to the Summary, Section S.2, and Chapter 2, Section 2.5.1, of this *TC & WM EIS*:

"Each alternative relies on a combination of technologies, processes, and facilities that could accomplish the desired outcome for that alternative. In many cases, those technologies were selected to provide bounding environmental consequences and do not necessarily represent the exact technologies or processes that could be implemented to achieve the desired outcome. This *TC & WM EIS* does not attempt to analyze all possible permutations of the alternatives (the alternatives analyzed in this EIS represent the range of reasonable approaches) using available technologies and processes, but instead attempts to group activities logically into reasonable alternatives for analysis. The technologies, processes, and facilities analyzed in detail in this EIS have sufficient performance data to make conservative assumptions regarding construction, operations, and decommissioning impacts. However, comprehensive and specific engineering designs may still have to be developed once a series of technologies is selected for implementation."

Commentor No. 24 (cont'd): John Swanson

) The cover sheet (also S-2) says "Hanford's mission --- included defense-related nuclear research, development, and weapons production activities." I have several problems with that sentence:

- No weapons were produced at Hanford (production and purification of plutonium for use in weapons [which were produced elsewhere] was the reason for Hanford's existence).
- Research and development were "secondary missions"; most of these efforts were directed towards improvements in plutonium production and purification.

24-2

Similarly, S-2 says "At the reprocessing plants, ---- plutonium was separated from the remaining uranium and byproducts and used for nuclear weapons production." Really, that sentence should end with "byproducts" and another sentence should be added along the lines of "The purified plutonium product of the reprocessing plants was shipped offsite to be included in nuclear weapons."

) The cover sheet provides a reference for the definition of HLW, but not for TRW waste or LLW. Why not re-word the sentence so that the same reference covers all the waste types? Also, point out that the definition of TRU waste includes an exclusion for HLW?

24-3

) The cover sheet uses, but does NOT define, the term "LAW". Shouldn't that be done here, especially to explain how LAW differs from LLW?

- LAW is defined on S-2

24-4

) Disposal of LLW is mentioned on S-1 (also on S-21), but not disposal of LAW (disposal of which was mentioned in the cover sheet). Consistency?

24-5

) The second paragraph on S-2 would be a good place to mention that three different purification/separation processes were used at Hanford. The first two (bismuth phosphate and REDOX) had large impacts on the kinds and quantities of chemicals that ended up in the waste tanks.

24-6

) The last paragraph on S-2 speaks of "new chemicals" being introduced to the tanks when uranium was extracted from some of the wastes – but doesn't make the same comment about the B Plant processes that were removed to extract cesium and strontium. "New chemicals" such as organic complexing agents were added at B Plant during strontium extraction; such chemicals have had important effects on tank waste chemistry – and, thus, might be worthy of mention here.

24-7

) Page S-6 says "--- in light of reviews of technetium-99 in ILAW glass, DOE and Ecology agreed to delete technetium removal from the WTP permit ---". Specify what was reviewed; behavior, performance, retention, leachability?

24-8

2

24-2 DOE's proposed actions as discussed in this *TC & WM EIS* are based on the purpose and need for agency action (see Chapter 1), which helps DOE to accomplish its current primary mission of cleaning up Hanford.

24-3 The abstract provided on the cover sheet is intended to provide a very brief overview of the proposed actions discussed in this EIS. The waste-type definitions are not all drawn from the same source or reference, and a detailed definition of each waste type is not appropriate for this overview. However, full definitions of the waste types analyzed in this EIS are provided in Chapter 9, "Glossary," as well as in other chapters of this EIS, where applicable (e.g., the Summary, Section S.1, and Chapter 2, Section 2.2).

24-4 Because many other terms that a reader may not understand are used in the cover sheet, a glossary is provided in both the Summary, Section S.9, and Chapter 9 of this *TC & WM EIS*.

24-5 The text box entitled, "Waste Types Analyzed in This Environmental Impact Statement," in the Summary, Section S.1.1, page S-2, of the *Draft* and this *Final TC & WM EIS*, as well as Section S.9, Glossary, defines LAW as follows: "Waste that remains after as much radioactivity as technically and economically practical has been separated from HLW that, when solidified, may be disposed of as LLW in a near-surface facility."

To address the commentor's consistency concern and clarify the text, the cover sheet (item 1 under the abstract) of this *Final TC & WM EIS* was changed to read: "LAW would be treated in the WTP and disposed of as LLW at Hanford as decided in DOE's ROD issued in 1997 (62 FR 8693), pursuant to the *Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement* (DOE/EIS-0189, August 1996)."

24-6 This level of detail is not appropriate for the Summary of this *TC & WM EIS*. More information on the composition of the tank waste is found in Chapter 2, Section 2.2.

24-7 This section of the *TC & WM EIS* Summary, History of the Hanford Site, is only a one-page summary and is not meant to be an all-inclusive history.

24-8 Appendix E, Section E.1.2.3.10, includes additional information on the decision to remove this capability from the WTP, as well as a reference: Hedges 2008 (Ecology letter to S.J. Olinger [DOE-ORP], et. al., dated October 15, 2008; subject: "Draft Waste Treatment and Immobilization Plant (WTP) Dangerous Waste Permit"). Included in this referenced letter is Ecology's Statement of

Commentor No. 24 (cont'd): John Swanson

- The discussion on S-91 suggests that the deletion of technetium removal was "justified" because of the existence of other sources of technetium that give a higher release rate than ILAW glass. If that's the case, you should say so here.

Also, this sentence is surprising in light of what is said in Ecology's January 2010 hand-out "Focus on Technetium-99 Removal" – that "Ecology supports sending more of the Tc-99 offsite to a deep geologic repository ---."

24-8 cont'd

) Doesn't deletion of technetium removal from the WTP place in jeopardy the ability to classify the waste as LAW? I believe that a large fraction of the technetium is present in the tanks as pertechnetate ion, which can be removed fairly easily. Thus, I believe that it could now be argued that much of the treated waste could NOT be called "ILAW" because it will NOT be true that "as much radioactivity as technically and economically practical has been separated from HLW" (definition of LAW as given on S-2).

24-9

) Why isn't disposition of the cesium and strontium capsules included in the EIS (per S-13)?

- After reading further (S-23), where de-encapsulation and treatment is discussed, I wonder if better wording here wouldn't be along the lines of "---- disposition of the cesium and strontium **that is currently in the capsules** will be determined ---"?

24-10

) Shouldn't you change the construction cut-off date for Alternative 1 to something later than 2008 (S-23)?

24-11

) S-24 refers to bulk vitrification of a portion of the LAW in the 200-West Area. It wasn't till I read Appendix E that I realized that you have determined that tank waste containing less than a certain concentration of cesium-137 could be consider to be LAW "as is". I think that fact should be made clear in the summary, too.

24-12

) On S-24, is "--- cast stone treatment ---" with no explanation of what that is. Ditto for "steam reforming treatment".

- Explanations are on S-37. . It would be helpful if the explanation would come the first time the term is used.

24-13

) On S-25, Alternatives 6A and 6B (disposal). What is "clean closure"?

- Explanation is on S-26. It would be helpful if the explanation would come the first time the term is used.

24-14

) S-33 mentions vacuum-based retrieval. I hope that the materials to be retrieved will not be dry (or dry out during retrieval), or contamination control will be much more difficult.

24-15

3

Basis, Proposed Modification of the Waste Treatment and Immobilization Plant Conditions in the Dangerous Waste Portion of the Hanford Facility Resource Conservation and Recovery Act Permit, which clarifies Ecology's decision. In summary, it states: "Ecology wants to ensure that any of the waste forms resulting from WTP unit treatment will meet the exposure and ground water performance criteria. The proposed permit conditions require that any waste forms from the WTP treatment process meet performance assessment groundwater and exposure limits, not result in a substantial groundwater impact for any significant mobile contaminant of concern, and not approach the Federal drinking water standard. These conditions are intended to ensure that, if the performance assessment shows any contaminant of concern, such as Tc-99, in any waste form may pose a threat to human health or the environment, additional treatment of the waste will be required."

24-9 As discussed in Chapter 8, Section 8.1.5, according to DOE Order 435.1, the LLW and MLLW disposal facilities (and the waste disposed in these facilities) that are analyzed in this EIS would be subject to the appropriate DOE Manual 435.1-1 requirements, including requirements for waste incidental to reprocessing. DOE fully intends to meet these requirements.

24-10 Cesium and strontium capsule treatment is described in detail in Appendix E, Section E.1.2.3.4, of this *TC & WM EIS*. At this time, DOE has not made final disposition decisions about the cesium and strontium capsules and will not make these decisions based on this EIS.

24-11 The WTP is currently being constructed at Hanford. As discussed in Chapter 4, Section 4.1, of this EIS, DOE assumed for analysis purposes that construction of the WTP would be terminated in 2008 under Tank Closure Alternative 1.

24-12 The suggested addition is at a level of detail that is not appropriate for the Summary of this *TC & WM EIS*. The Summary is intended to provide a brief overview of the material contained in this EIS and, by nature, cannot include specific details from the appendices. Recognizing that many people may not read beyond the Summary, DOE attempted to strike a balance between those readers interested in the technical details regarding DOE's proposed actions and alternatives and readers seeking a simple overview.

24-13 Because there are many terms used throughout this *TC & WM EIS* that a reader may not intuitively understand, a glossary was provided in both the Summary, Section S.9, and Chapter 9 of the main body of this EIS.

Commentor No. 24 (cont'd): John Swanson

) S-36 contains some examples of inconsistent usages, which it would be nice to avoid:

a) The box says that there is a High Level Radioactive Waste Vitrification Facility; the text description omits the word "Radioactive".
b) The text says "--- treat waste, and convert treated waste into a glass form ---." Per the usage back when I was working (and, apparently, when the facilities within the WTP were named), "treat" referred to the immobilization step (e.g., vitrification, grouting, steam reforming) and "pretreat" referred to steps taken prior to immobilization (e.g., radionuclide removal, solids removal). The wordings on this page indicate that "treatment" will take place in a "pretreatment facility"; this adds unnecessary confusion. ***24-16***

) S-37 says "--- electrodes would be inserted into the waste." Shouldn't that be "--- inserted into the waste/soil mixture"? ***24-17***

) S-37 says "--- LAW retrieved from the tanks ---." Per the definition of LAW (S-2), that means that some in-tank radionuclide separation processing is planned. Is that really the case? (I've seen no mention of it)

- Maybe the Solid-Liquid Separations Processes description on the next page is implied here? It's not clear whether the settling and decanting process would be done within the storage tank or elsewhere.
- In reading Appendix E, I see that some of the tank wastes have already been classified as LAW – which makes the statement on S-37 okay. HOWEVER, shouldn't the Summary discuss (at least, state) this fact? I think so. ***24-18***
    - In my second time through the Summary, I do find on S-38 "--- waste that may contain low cesium-137 concentrations ---.", BUT it doesn't say there that it is considered to be "LAW".

) S-38, Sulfate Removal, says "--- then the tank waste would be filtered and solidified using grout-forming additives." Isn't it the filtered solids that are grouted rather than the tank waste itself? ***24-19***

) S-38, Technetium, "Under all other Tank Closure alternatives, technetium-99 would remain in the LAW stream." I thought there were data showing that a fraction of the Tc was present in the waste in insoluble form(s); that fraction would go to the HLW stream. ***24-20***

) S-50, Section S.4.1.3 lists four "treatment and pretreatment technologies" that were initially considered but were eliminated from detailed consideration in this EIS. Shouldn't some "consideration time frame" be provided here – or the list of considered technologies be expanded appreciably? ***24-21***

- I'm sure that other technologies were considered at the time of the initial TPA, and in subsequent years. One example is "grouting" (I guess it's now being called "cast

4

24-14 A text box has been added to the *TC & WM EIS* Summary, Section S.2.1.5, to clarify the different closure scenarios evaluated in this EIS.

24-15 As discussed in Appendix E, Section E.1.2.2.2, the mobile retrieval systems (MRSs) use mostly air and a small amount of water to retrieve the tank waste. In addition, as discussed in Section E.1.2.2.2.3, a ventilation system within the tank maintains a negative tank pressure to ensure the airflow is pulled into the tank at all times and airborne contamination is not released from the tank.

24-16 The term is not spelled out in the text as it is in the text box. Rather, the acronym "HLW," meaning "high-level radioactive waste," is used. This acronym is defined in the list of abbreviations and acronyms provided in the front of the Summary, as well as in the text box explaining the various waste types on page S–2 and in the text on the same page. To address the commentor's concern and confusion, the wording on page S–36 of the *Draft TC & WM EIS* has been changed to "...pretreat waste, and convert the pretreated waste into a glass form..." (page S–55 of this *Final TC & WM EIS*).

24-17 The text in this *Final TC & WM EIS* was revised to read, "...inserted into the waste and sand/soil mixture."

24-18 In the *Draft TC & WM EIS* Summary, Section S.3.1.4, under the heading "Steam Reforming," the use of the phrase "LAW retrieved from the tanks" is correct. This phrase refers to the retrieval of LAW from one or more of the LAW tanks identified in Appendix E, Table E–8, in the final EIS. For analysis purposes, this EIS assumes that the waste from these tanks is LAW due to the low concentration of cesium-137, as discussed in Section E.1.2.3.5.2. The Solid-Liquid Separations Facility, located in the 200-West Area, provides a settling and decanting operation that would result in strontium and TRU waste precipitation. This precipitated solid-waste stream would be forwarded to the WTP, while the decant solution would be forwarded to a supplemental treatment technology facility. In the referenced section within the Summary, this would be the steam reforming supplemental treatment facility. However, the following clarification was made to the referenced sentence in this section: "Pretreated waste or LAW retrieved from the tanks (i.e., waste retrieved from the designated LAW stream) would be diluted with water so it could be pumped into a vessel."

24-19 The commentor is correct. The following revision was made in this *Final TC & WM EIS* to the referenced sentence in the Summary, Section S.3.1.4: "First, strontium nitrate would be added to the tank waste, causing sulfate to separate out

Commentor No. 24 (cont'd): John Swanson

stone" instead of "grout") of all the LAW (this is being done at other DOE sites). Another example is dissolving the sludge so that contained radionuclides could be separated from the inert elements – thus allowing a large reduction in the volume of HLW glass to be produced and disposed of).

- Why wasn't separation of cesium from salt waste by solvent extraction (instead of ion exchange), as is being implemented at Savannah River, considered here? (I imagine that the response might be along the lines that it was felt that the design of the WTP had proceeded too far to be changed; if so, that should be so stated).
- Section E.1.2.3.5.1 (E-67) describes how "Supplemental Waste Treatment Options" were evaluated and down-selected. I haven't seen similar discussion regarding the technologies listed in Section S.4.1.3.

24-21 cont'd

) S-51 says "---the HLW melters would be stored on site. Thus, onsite disposal was eliminated from further consideration in this EIS."

- I don't follow the reasoning that onsite storage eliminates consideration of onsite disposal.
- I thought I read earlier (somewhere in this Summary) that the HLW melters would be disposed of as HLW. (It's in the Ecology contribution).

24-22

) I think you should delete the "and in Europe" from the sentence on S-55 regarding separation of waste into HLW and LAW streams. I know of no such activity in Europe – with (alkaline) wastes similar to those at Hanford, anyway.

24-23

) S-55 says "Full-scale production of ILAW using the bulk vitrification, cast stone, and steam reforming processes has not been conducted anywhere within the DOE complex."

- Shouldn't the vitrification technology planned for the WTP be included in this list (of things that haven't been operated on full-scale anywhere)? I don't know of any full-scale production of ILAW glass, and I'm pretty sure that there hasn't been any – given that Hanford is the only site planning to use that technology.
- I think (but am not sure) that Savannah River has done full-scale grouting (stone casting or cast stoning) of some of their salt wastes (but they use a different term for the process).

24-24

) S-87 says that the envioronmental findings discussed here are only for the drinking-water well user because "--- estimates of human health impacts for all types of receptors increase or decrease in proportion to those estimated for the drinking-water well user." Please say also how these estimated impacts compare in magnitude to those estimated for the impacts to the well user (are they "comparable to", "greater than", or "less than"?).

- A better reason to discuss only the well-water case would be if it were the (upper) bounding case? If it is, say so?

24-25

5

as a strontium sulfate precipitate, then this resulting strontium sulfate precipitate would be immobilized in a grout waste form."

24-20 The commentor is correct, a small fraction of the technetium-99, approximately 0.5–0.9 percent of the BBI, was estimated to remain within the HLW stream under Tank Closure Alternatives 2A; 3A; 3C; 4; 5; 6B, Base and Option Cases; and 6C. The referenced sentence in the *TC & WM EIS* Summary, Section S.3.1.4, was revised to read as follows: "Under Tank Closure Alternatives 2A; 3A; 3C; 4; 5; 6B, Base and Option Cases; and 6C, the majority of the technetium-99 would remain in the LAW stream."

24-21 Section S.4.1.3 of the Summary was intended to summarize the waste treatment technologies initially considered but not analyzed in detail in this EIS. Appendix E, Section E.1.3.3, provides a more detailed discussion on the supplemental LAW treatment technologies identified for analysis in this EIS, as well as a summary of the Technology Readiness Assessment conducted by DOE in 2007.

In Appendix E, Section E.1.3.3.3.2, of this final EIS, a discussion was added concerning implementation of a cesium ion exchange process as an equipment option for the WTP. In summary, the design and construction of the WTP Pretreatment Facility had progressed too far for implementation of cesium separation by caustic-side solvent extraction when this technology was proven viable at the Savannah River Site. However, as described in Section E.1.3.3.3.2, it was considered as a potential supplemental pretreatment process in the 200-West Area for medium-curie tank waste. Continuation of the Pretreatment Testing and Demonstration Program in 2006 through 2008 resulted in the selection of ion exchange for cesium separation over caustic-side solvent extraction for pretreatment of the 200-West Area SSTs. Implementation schedules showed that a pretreatment system could be implemented approximately 2 years earlier if the ion exchange technology process was selected over the caustic-side solvent extraction process. Furthermore, the ion exchange capital and life-cycle costs were estimated to be significantly lower than the solvent extraction system costs.

24-22 The commentor is correct. This EIS assumes the HLW melters, as well as the IHLW, would be managed and disposed of as HLW and would be stored on site at Hanford until HLW disposition decisions are made and implemented.

The current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for

Commentor No. 24 (cont'd): John Swanson

) Beginning with Figure S-14 (page S-88), there is a series of figures with the legend on the ordinate labeled "Radiological Risk (unitless)" – and the caption states that it is the risk to a "drinking-water well user". However, in the box on the same page, "radiological risk" for an individual is "--- expressed as the probability over a lifetime of developing cancer." There is an inconsistency here; if the values in the figures are indeed probabilities of developing cancers (as described in the box), the legend on the ordinate should so state; if the values in the figures are indeed unitless, description should be given as to how the unitless values were calculated.

- Discussions with officials during the "poster session" on January 26 led to agreement that the "unitless" label is incorrect.

24-26

) I believe that there should be some discussion here to compare the risks indicated in these figures to other risks – to put them in perspective (life is full of risks).

- It would help to put things in perspective by comparing the probabilities shown in these figures with the probability of developing cancer in the absence of the effect of the radionuclides. I don't know what the probability of developing cancer "normally" is, but I'm sure that it's MUCH greater that the ~2% probability shown in Figure S-14 as the highest risk to a well-water drinker from Hanford radionuclides.
    - If, for example, the average American has a 50% probability of developing cancer in his/her lifetime, then one could say that the assumed well-water drinker would be 25-times more likely to develop cancer during his/her lifetime from "other sources" than from the radionuclides in the well water under tank closure Alternative 1. I believe it would be very helpful to put a statement such as that in the EIS.
        - Inclusion of a statement such as this might hopefully counteract some statements (e.g., "devastating impacts" and "severe cancer risks") that were made during the "question period" at the January 26 meeting.

24-27

) Also, I don't think it's proper to say in the EIS, as is done on S-87, that continued storage would have "significant long-term impacts" – without describing what you consider to be "significant". One value can be "significantly larger" than another without being "significant" (e.g., a debt of $1 is significantly larger than a debt of $0.01, but I don't think that many people would consider that a debt of $1 is significant).

24-28

) Along the same lines as the preceding comment(s), I don't understand why "The analysis suggests that additional treatment or waste form development may be needed for secondary waste." (S-90) when the maximum radiological risk shown in Figure S-15 would lead to a probability of only 0.001(0.1%) that a Hanford well-water drinker would develop cancer (from the Hanford radionuclides) in his/her lifetime – while the probability of that person developing cancer from other sources is perhaps 0.5(50%).

24-29

6

a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

Additional information regarding onsite storage of the HLW melters is included in Appendix E, Section E.1.2.4.4. For analysis purposes, this final EIS analyzes the impacts of safely storing the HLW melters and IHLW through the estimated operational timeframe for the WTP under each of the Tank Closure alternatives. See the foreword to this *TC & WM EIS* for Ecology's discussion of melters.

24-23 The phrase "and in Europe" was deleted in this final EIS from the Summary and Chapter 2.

24-24 The commentor is correct. Treatment of LAW using a LAW melter has not been conducted on a full-scale production basis. In the *TC & WM EIS* Summary, Section S.5.2.1.3, as well as in Chapter 2, Section 2.7.4, the referenced sentence has been revised to read: "Full-scale production of ILAW using the LAW melter, bulk vitrification, cast stone, and steam reforming processes has...."

24-25 Additional text has been added to the *Final TC & WM EIS* Summary, Section S.5.5, explaining why the drinking-water well user was chosen for the key environmental findings.

24-26 The discussion of the units of risk has been clarified, as necessary, and consistent usage has been applied throughout this final EIS. The term "unitless" has been deleted from the figures in the Summary, Section S.5.5, Key Environmental Findings.

24-27 A discussion on risks associated with everyday life has been added to Appendix K, Section K.1.1.6, of this final EIS.

24-28 The "significant long-term impacts" referred to in the text are described in the rest of the section on Tank Farm Waste Retrieval, which has been edited for clarification.

24-29 Agencies regulate a much lower level of risk when a member of the public has no choice to accept risk. Protectiveness for carcinogens under CERCLA is set at levels that represent an upper-bound lifetime cancer risk to an individual of between 10-4 and 10-6; this level is deemed acceptable by EPA.

Commentor No. 24 (cont'd): John Swanson

) I am troubled by the sentence "The analysis indicates that ILAW glass with or without technetium-99 has similar potential short-term and long-term impacts." (S-91); I'm quite sure that the estimated long-term impacts of ILAW glass leachates are quite different with or without technetium-99.

- I think what is meant is that the systems analyzed here, with and without technetium in the ILAW glass, show similar impacts – not a comparison of ILAW glass alone.
- The last sentence of this section contains a qualifying statement (that other sources of technetium swamp the glass leachate source), but the structure of that sentence indicates that that qualification applies to the sentence following the one I object to.
    - It would help some if the last sentence were to begin "These indications result because the rate ---." (as opposed to "This is because the rate ---."), but it would be better if the troubling sentence ("The analysis indicates --.") were re-done so that it says what is meant.

24-30

) S-91 says "--- sulfate removal technology is evaluated after WTP pretreatment to ---." I would consider sulfate removal to BE a pretreatment step. I'm not sure what is meant here – maybe something like " --- sulfate removal is included as an added pretreatment technology to ---."?

- E-68 says "--- one pretreatment option, sulfate removal, ---."
- E-69 says "--- sulfate removal is also included --- as a pretreatment process outside the WTP." Combining this thought with that on E-91 indicates that the waste will be pretreated in the WTP, then sent outside the WTP for additional pretreatment, then sent back to the WTP for LAW immobilization; is that really the plan?

24-31

) The data in Figure S-18 appear to be identical to those in Figure S-14 – so why is S-18 included?

24-32

) I doubt the accuracy of the last sentence on S-96. What radiological constituents are thought to be orders of magnitude (which means more than a factor of 100) higher at Hanford than at other DOE sites (where fuel reprocessing was done)? Maybe you're comparing Hanford to sites that didn't do reprocessing (and thus wouldn't have large quantities of fission products)? Clarify the meaning/intent?

24-33

) Based on what is said on S-111("Offsite disposal costs for IHLW are not included in the cost data."), the title of Table S-13("--- Costs for Final Waste Form Disposal") should be changed – because offsite disposal costs for IHLW are most certainly final disposal costs.

- This also raises the question of why offsite disposal costs for IHLW were not included in the EIS? I know that some estimates were made years ago (and may well have been updated); they could be included here in this EIS "for comparative purposes", at least.

24-34

7

24-30 The text in Section S.5.5.1 of the Summary has been revised in this final EIS to clarify that ILAW glass with and without technetium has similar impacts.

24-31 The commentor is correct. As discussed in Appendix E, Section E.1.2.3.9, the sulfate removal process would follow tank waste pretreatment in the WTP Pretreatment Facility. The sulfate-depleted LAW solution would then be returned to the WTP for evaporation and subsequent LAW vitrification. The discussion in the Summary is consistent with the text in Appendix E.

24-32 The purpose of Figure S–18 is to compare the impacts of the closure assumptions of the Tank Closure alternatives with the magnitude of long-term human health impacts. The purpose of Figure S–14 is to compare the degree of retrieval with the magnitude of long-term human health impacts.

24-33 Regarding the statement that select radioactive constituents at Hanford exist in amounts that are orders of magnitude higher than those at other DOE sites, the intent was to clarify that Hanford's waste releases from tank leaks and intentional discharges to the soil column far exceed waste releases to the environment at the three other DOE fuel-reprocessing sites: the West Valley Demonstration Project, the Savannah River Site, and Idaho National Laboratory (INL).

24-34 Please see response to comment 24-22 for information.

Commentor No. 24 (cont'd): John Swanson

- A rough "rule of thumb" used ~20 years ago was 0.5 million dollars per IHLW canister disposed of in a geologic repository. I doubt that that estimate has decreased in the intervening years; final disposal costs for IHLW could run into many billions of dollars – and would vary widely among the alternatives examined in the EIS. Shouldn't that be discussed in the EIS?

24-34 cont'd

) S-119 says that this EIS describes the INL environment. Why?

24-35

) E-42 says "HLW solids, strontium, TRU waste compounds, and cesium would be separated --." Saying "TRU waste compounds" implies (to me, anyway) that the TRUs are present as (a) solids, and (b) relatively pure materials – and I don't think the waste TRUs fit that description any more than does strontium. Why not say "--- strontium, transuranics (or, TRUs), and cesium ---."?

On E-44 is "TRU waste components"; that is better than "TRU waste compounds". Still, why not just "TRUs"?

24-36

Also on E-44, the term "TRU waste" is used to describe soluble TRUs. That is a very unfortunate choice of words, as "TRU waste" is commonly used to describe solid wastes that contain >10 nanocuries per gram of TRU alpha activity.

- I see "TRU waste" in this incorrect usage on E-69 and -71, too. More later, also.

) Also on E-42 is "The pretreated supernatant and permeate from the separations process ---." Isn't pretreated supernatant in fact permeate?

24-37

) I question the accuracy of saying (as on E-44) that evaporation of dilute feeds or dilution of concentrated feeds would dissolve soluble salts. Aren't the soluble salts already dissolved?

24-38

) I don't think you should use the term "entrained solids" to describe the feed to HLW vitrification – as is done on E-44 (under description for Envelope A and B feeds).

24-39

) E-46 says "---silver mordenite column (removes iodine-129 and volatile compounds) ---.", which indicates that ALL volatile compounds are removed by silver mordenite – which isn't true. Say instead "--- (removes volatile iodine compounds) ---."?

Also, I'm surprised that there is provision for removal of iodine from the HLW melter offgas; I wouldn't expect much iodine to be present there.

24-40

) E-47 says "--- glass formers would be added and blended to maintain the solids in suspension." Shouldn't it be something like "--- glass formers are added and the mixture is agitated to keep the solids in suspension."?

24-41

8

24-35 Chapter 3, Section 3.3, of this *TC & WM EIS* describes the existing environment at INL because FFTF Decommissioning Alternatives 2 (Entombment) and 3 (Removal) both include INL options for disposition of remote-handled (RH) special components (RH-SCs) and/or bulk sodium.

24-36 DOE agrees with the comment. Appendix E, Section E.1.2.3.1, page E–42, fourth paragraph, second sentence of the draft EIS, was revised to read: "HLW solids, strontium, transuranics, and cesium ...." On page E–44, the first bullet was revised. Also, on pages E–44, E–69, and E–71, the multiple uses of "TRU waste" were revised to read "transuranics."

24-37 Pretreated supernatant could be permeate from the separations process. Both terms were used in this description to capture the general processes included in the WTP complex.

24-38 As used in Appendix E, page E-45, the term "soluble salts" describes salts that can be dissolved, not salts that are already dissolved (salts that cannot be dissolved are called "insoluble salts"). No change to this EIS is required.

24-39 The term "entrained solids" was quoted from a referenceable and reliable source (BNI 2005). This term generally describes solids that are carried along with liquid waste streams. No revision of this EIS is required.

24-40 As stated in the referenced document (BNI 2005), the silver mordenite columns would remove both elemental and organic iodine and other halogens (such as chlorides and fluorides) in the form of hydrochloric acid and hydrofluoric acid. Therefore, the referenced sentence in the draft EIS was revised in this final EIS by replacing the term "volatile compounds" with the term "other halogens."

24-41 In this final EIS, the referenced sentence in Appendix E, Section E.1.2.3.1.3, was revised to read: "Batches of concentrated LAW feed would be transferred from these vessels to melter feed preparation vessels, where glass formers would be added and blended to form a uniform batch for the LAW melter."

Commentor No. 24 (cont'd): John Swanson

) One of the paragraphs on E-47 is structured strangely; it speaks of the canisters being sealed and decontaminated before it speaks of sampling and filling if necessary. Delete the first sentence? ***24-42***

) Another confusing paragraph on E-47 regards offgas treatment. Among other things, it speaks of removing nitrogen oxides, carbon monoxide, and VOCs – and then speaks of oxidizing or reducing those materials. Re-work it? ***24-43***

) E-50 speaks of "--- dewatering (using ion exchange resins) ---." I think that should be "used", not "using". ***24-44***

) E-51 speaks of secondary solid waste from the HLW vitrification facility as being RH. I think that some/much of this waste will also be TRU, and thus, would not be "disposable" in an IDF. Will WIPP accept RH-TRU by then? Will additional storage facilities be needed at Hanford? Won't the waste have to be assayed to see if it's TRU? Address these points? ***24-45***

) E-52 says "--- some of the select radionuclides to emit offgas ---." That's very poor. Say something like "--- volatilization of portions of some radionuclides ---."? ***24-46***

) E-53 says "The amount of sodium processed influences --- the amount of IHLW and ILAW product." That may not be a completely incorrect statement, but it is certainly misleading – as the "influences" are very different. While increases in sodium usage will <u>increase</u> the amount of ILAW, they can <u>decrease</u> the amount of IHLW (till a limiting value, below which additional leaching is ineffective, is reached). ***24-47***

) Several comments on the first "bullet" on E-54:

- Now says "Sodium is added ---to solubilize aluminum." Should say 'Sodium hydroxide is added ---."
- Now says "--- disposed of as LLW." Shouldn't that be LAW?
- Sodium hydroxide recycle is mentioned as a possible technology to minimize the impact of added sodium. That technology was being investigated for this purpose 10-15 years ago; why was it dropped?
- I don't understand how "treating or separating the aluminum within the tank waste prior to sending it to the WTP." will decrease the amount of sodium – unless the leach solutions would then not pass through the WTP (if that is the case, say so).
    - I'm assuming you mean "within the waste tank" instead of "within the tank waste". ***24-48***

) Second bullet on E-54:

- Says "--- more sodium may be required to limit the number of IHLW glass canisters produced." Better to say something like "--- to give an acceptably low number of IHLW glass canisters."? ***24-49***

9

24-42 DOE reviewed the subject paragraph in the draft EIS, Appendix E, Section E.1.2.3.1.3, and sees no need to restructure the paragraph.

24-43 DOE reviewed the subject paragraph in the draft EIS, Appendix E, Section E.1.2.3.1.3, which was quoted from BNI 2005, and believes it to be technically correct.

24-44 The commentor is correct. In this final EIS, the word "using" was changed to "used" in Appendix E, Section E.1.2.3.1.5, Secondary Solid Waste.

24-45 For analysis purposes, this *TC & WM EIS* assumed that no TRU waste would be generated by WTP operations. While a small inventory of TRU solid secondary waste may be generated during WTP operations, this EIS assumed that none would be generated. The reasons for this assumption include: (1) DOE has no operational experience with the WTP HLW Vitrification Facility; (2) operational experience at other DOE vitrification sites indicates little or no TRU waste generation; and (3) for analysis purposes, it was necessary to cap the potential environmental impacts in this EIS by assuming the maximum radioactive and chemical inventories in the IDF(s). Therefore, for analysis purposes, DOE assumed that all solid secondary waste generated from the WTP would meet the *Hanford Site Solid Waste Acceptance Criteria* for LLW or MLLW and would be disposed of in an IDF. As discussed in Appendix E, Section E.1.2.3.1.5, any secondary TRU waste generated would be managed by existing or modified Hanford TRU waste facilities (e.g., the Waste Receiving and Processing Facility). In such cases, the waste would be examined and its waste type confirmed according to established procedures. If the waste were TRU waste, it would be disposed of at WIPP, which is currently accepting RH-TRU waste.

24-46 The referenced sentence in Appendix E, Section E.1.2.3.1.7, was revised in this final EIS to read: "The high temperatures associated with the ILAW process would cause volatilization of some of the select radionuclides, emitting offgases that would ultimately be captured in secondary-waste streams."

24-47 DOE reviewed the referenced sentence in the draft EIS, Appendix E, Section E.1.2.3.1.7, and sees no reason to revise it. It is technically correct and is not considered misleading.

24-48 The following revisions were made in this final EIS, Appendix E, Section E.1.2.3.1.7, to the fourth bullet: (1) third sentence: "hydroxide" was added after "Sodium"; (2) fifth sentence: "LLW" replaced with "LAW"; (3) sixth sentence: "LLW" replaced with "LAW"; (4) eighth (last) sentence: "LLW" replaced with "LAW," and changed "tank waste" to "waste tank."

Commentor No. 24 (cont'd): John Swanson

- What is the basis for the 90,000 MT value? That apparently must result from additions of 42,000 MT during pretreatment, which is a factor of 3.5 greater than is currently assumed. Is the "design basis flowsheet" really that uncertain??? A sad commentary if it is. ***24-49 cont'd***

) Fourth bullet on E-54: I don't understand how allowing an increase in viscosity ensures that the glass will flow better. (I would think the opposite, but I'm not expert in this area.) ***24-50***

) Some of the information in Section E.1.2.3.5.2 came as a surprise to me; I don't believe it was mentioned in the Summary, and feel that it should be. For example: ***24-51***

- The concurrence of the NRC that "--- the recovery of waste containing <0.05 curies per liter of cesium-137 was not economically practical ---."
  - I don't think that "recovery" should be the operative word here. "Removal of cesium from waste containing ---" instead?
  - I remember the Summary discussing the decision that technetium removal wasn't necessary, but I don't remember any discussion there about cesium removal not being necessary if the concentration in the feed is below a certain level.

) E-69 says "At this concentration of cesium, no more that 5 million curies of cesium137 would be disposed of in the ILAW glass." I feel that this can be misleading (it can be taken to mean that the total amount of ILAW glass will contain no more than 5 million curies of cesium). What is meant, I think, is that not separating cesium from the sodium that is in these 35 tanks would result in the addition of no more than 5 million curies of cesium-137 to the ILAW glass. ***24-52***

) E-83 says "Temporary storage of a 5-molar sodium cast stone feed solution at maximum throughput rates for 5 months would require the use of two DSTs." – BUT E-85 says that the tanks used for this purpose would be 30,000-gallon tanks. Aren't the existing DSTs 1,000,000-gallon tanks? Using the term "DSTs" to describe 30,000-gallon tanks is misleading. ***24-53***

) E-89 says "--- sodium molarity of 2.9 molar, or approximately 50 percent water content." That is poor wording; I'm sure that a 2.9 molar sodium nitrate/hydroxide solution contains more than 50% water (A 3 molar sodium nitrate solution contains 78% water). ***24-54***

- This incorrect statement is also present in many other places in this section.

Also, the next sentence says that this dilution is required to transform the feed into a pumpable liquid. Other technology descriptions have talked of much more concentrated feed solutions; weren't they pumped? Give some other reason for this 2.9 molar concentration?

) E-90 uses the term "soluble carbon reductant (sucrose)"; that strikes me as being a bad term. For one thing, it can be taken to mean that carbon is the thing that is being reduced (which isn't the case). How about saying something like "--- including a soluble carbon-containing reducing ***24-55***

10

DOE continues to review the benefits and costs of implementing sodium hydroxide recycling. For example, in 2009, DOE reviewed the feasibility of constructing an Aluminum Removal Facility, which would use a lithium hydrotalcite process and would provide caustic leaching and sodium hydroxide recycling in a standalone facility. Processing in such a facility would occur before waste processing in the WTP Pretreatment Facility, which would reduce the demand on the WTP. More recently, DOE has been evaluating other options to effectively blend and characterize tank waste prior to transfer to the WTP, such as the addition of an Enhanced Waste Receiver Facility. This process, along with the cesium ion exchange process, could allow a 40 percent waste oxide loading into ILAW glass.

24-49 DOE reviewed the referenced sentence in Appendix E, Section E.1.2.3.1.7, the fifth bullet, and determined that no revision is necessary. The estimate of 90,000 metric tons was evaluated by DOE during preparation of this EIS and was presented to show a range of the potential impacts that the additional sodium may have on the ILAW volume. As presented in the second bullet in this same section, this EIS assumes that the WTP would process 60,000 metric tons of sodium, including approximately 48,000 metric tons within the tank waste and 12,000 metric tons that would be added during pretreatment. Thus, if the total sodium processed reached 90,000 metric tons, the 12,000 metric tons added during pretreatment would increase by 30,000 metric tons to 42,000 metric tons.

24-50 The increase in the allowable viscosity from 5.5 to 10 pascal-seconds supports better control of the HLW melter by lessening excessive convection currents, which decreases corrosion/erosion of the melter materials of construction (the refractory and electrodes). In contrast, a high viscosity can reduce canister quality by causing voids in the final glass waste form. The referenced sentence was revised in this final EIS to read as follows: "The maximum allowable viscosity of the IHLW glass was increased from 5.5 pascal-seconds to 10 pascal-seconds to reduce excessive convection currents during melting operations, thereby reducing corrosion/erosion of the melter materials and achieving better overall control of the HLW melter."

24-51 A review of the use of the word "recovery" determined that it should not be replaced, but the sentence should be revised to clarify its meaning. The sentence was revised in this final EIS as follows: "The designation of the contents of the 35 tanks listed in Table E–8 as LAW is based on the analysis found in the *Technical Basis for Classification of Low-Activity Waste Fraction from Hanford*

Commentor No. 24 (cont'd): John Swanson

agent (sucrose), referred to here as "carbon reductant", and a ---- "? Then it would be clear what "carbon reductant" means.

Same problem is in the next paragraph, where I see "carbon reduction reformer" and "carbon reduction fluid bed" (the upper part of which is run under oxidizing conditions to oxidize residual "carbon reductants and organics" [note that the so-called "carbon reductant" IS an organic compound; it would be better to say "waste-contained organics").

- Also see "residual carbon reductants and organics" on E-94.

There seems to me to be a lot of "engineering jargon" in this section. I assume/hope that it makes sense to the people who are familiar with this technology – but it's not really technically accurate, which makes it confusing to others.

) E-91 says "--- oxygen would be injected to oxidize the gaseous constituents more fully." That implies that some oxidation of gaseous constituents occurs earlier, which I don't believe is the case. Also, it's not the reason given on E-90 for the oxidizing zone.

) On E-100, why would the filtrate from the sulfate precipitation step be neutralized (thereby adding sodium – and increasing the volume of ILAW)?

) Are the fractions of TRUs that are present in the sulfate precipitate large enough to make the precipitate a "TRU waste"? If so, wouldn't it have to go to WIPP (vs EDF)?

) I don't believe that "--- reducing the sodium content of the waste stream being directed back to the WTP process." would "--- increase the waste loading in the WTP LAW melters." – as is said on E-169. Reducing the amount of sodium being directed back to the LAW melters would decrease the load on the melters, though.

) E-169 says "The fractional crystallization process was not evaluated in detail because of the lack of available data demonstrating the process on actual tank wastes." I think a "double standard" is being applied here; I believe that there are technologies included in the proposed WTP process that are based on fewer "data demonstrating the process on actual tank wastes" than are available for fractional crystallization.

) Page E-171 says "The key problem identified would be achieving an immobilized waste form for the crystallized sodium nitrate ---." How about adding water and "cast stoning" it? (That should make the problem equivalent to that in the "cast stone" alternative)

11

24-55 cont'd

24-56

24-57

24-58

24-59

24-60

24-61

Site Tanks, which stated that waste containing less than 0.05 curies per liter of cesium-137 was not economically practical for recovery."

24-52 DOE has reviewed the text in question and agrees with the commentor regarding the need for clarification. In this final EIS, the second sentence in the second paragraph in Appendix E, Section E.1.2.3.5.2, was revised to read as follows: "At this concentration, not separating additional cesium-137 from the waste in the 35 tanks would result in the addition of no more than 5 million curies of cesium-137 in the ILAW glass."

24-53 Appendix E, Section E.1.2.3.7.2, describes the dissolved salt storage tanks and the temporary storage requirements for use of two DSTs. These are not the same tanks; the first set of tanks includes the two 30,000-gallon receipt tanks, depicted as "Receipt storage" tanks in Figure E–18. The second set consists of DSTs (1 million- to 1.16 million-gallon tanks) that may be used for temporary storage of the cast stone feed. Appendix E, Section E.1.2.3.7.4, Low-Activity Waste Receipt, Conditioning, and Storage Systems, describes only the two 30,000-gallon dissolved salt cake storage tanks that are part of the Cast Stone Facility. The DSTs are not described as 30,000-gallon tanks. No change in this EIS is deemed necessary.

24-54 DOE has rechecked the references cited in Appendix E, page E–89, of the draft EIS and confirmed that the wording used in this EIS correctly reflects the wording in the references. Therefore, no revisions were made to the text in this final EIS.

24-55 To clarify the first use of the term "soluble carbon reductant (sucrose)," on page E–94 of Appendix E, Section E.1.2.3.8.2, of this final EIS, "soluble carbon reductant (sucrose)" was revised to read "soluble, carbon-containing reducing agent (sucrose), referred to in this EIS as a 'carbon reductant.'" The additional uses of "carbon reduction" or "carbon reductants," as mentioned by the commentor, are considered standard terms within the industry and their use was continued in this EIS.

24-56 DOE sees no inconsistency between the fifth bullet in Appendix E, Section E.1.2.3.8.2, and the discussion in the previous paragraph. The second paragraph of this section states that oxygen is injected into the upper zone of the carbon reduction reformer to complete the destruction of nitrogen compounds, which was partially achieved in the denitration and mineralization reformer vessel. The fifth bullet states that oxygen would be injected into the carbon reduction reformer to oxidize the gaseous constituents more fully (and to

complete the destruction of nitrogen compounds). The purpose of oxidizing this zone would be to convert residual carbon reductants and organics into carbon dioxide and water vapor.

24-57 The filtrate from the sulfate precipitation step is acidic and needs to be neutralized prior to its transfer to the WTP for vitrification in the LAW process. As discussed in Appendix E, Section E.1.2.3.9.1, prior to the precipitation process, the solution is adjusted to a pH of 1.0 by adding nitric acid.

24-58 Based on available testing data, this EIS assumes that the strontium sulfate precipitate is an LLW or MLLW form that would comply with IDF waste acceptance criteria. However, this assumption is based on limited information, as discussed in Appendix E, Section E.1.2.3.9.4. If the concentrations of TRU radionuclides meet the TRU waste definition, then the commentor is correct—the waste would be packaged to meet the WIPP Waste Acceptance Criteria and would be disposed of at WIPP. As stated in Section E.1.2.3.9.4, significant amounts of select radionuclides (e.g., TRU waste, cesium) would be removed within the WTP Pretreatment Facility prior to the waste being introduced into the Sulfate Removal Facility. This is expected to reduce the amount of radionuclides that could be of concern during the sulfate removal process.

24-59 The statement as written is correct. Reducing the sodium concentration in the waste stream would allow a higher waste load in the LAW melters and, therefore, a higher waste load in the final (ILAW) waste form. A discussion of the potential effects of sodium on IHLW and ILAW volumes is included in Appendix E, Section E.1.2.3.1.7, of this EIS.

24-60 As noted by the commentor, Appendix E, Section E.1.3.3.3.2, states that the fractional crystallization process was not evaluated in detail due to a lack of available data demonstrating this process on actual tank waste at the time of this EIS's preparation. DOE recognizes the commentor's concern, however, and this technology remains under study. Section E.1.3.3.3.2 of this final EIS includes an update of the latest information on fractional crystallization. In summary, based on the testing data available as of 2008, DOE selected ion exchange for cesium separation instead of caustic-side solvent extraction and fractional crystallization because the earliest possible deployment of this pretreatment system could be achieved using the ion exchange technology. Additionally, ion exchange capital and life-cycle costs were estimated to be significantly lower than those of fractional crystallization. Therefore, only limited testing of fractional

Commentor No. 24 (cont'd): John Swanson

crystallization will continue for the purpose of ensuring an alternate cesium removal technology that can provide a waste feed supply to the WTP.

24-61 As the commentor suggests, the addition of water may be a solution to meeting disposal requirements; however, additional flowsheet and waste characterization data are not available at this time. Therefore, this technology was not analyzed further in this EIS.

Commentor No. 25: Deanne Belinoff

From: Deanne Belinoff [deanne@xprt.net]
Sent: Friday, January 29, 2010 1:30 PM
To: tc&wmeis@saic.com
Subject: dumpstie -pacific northwest

NO RADIACTIVE DUMPSITE AT HANFORD....will to work this issue. *25-1*

deanne belinoff

25-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 26: Mary Duvall

From: Mary Duvall [rover@clatskanie.com]
Sent: Friday, January 29, 2010 8:28 PM
To: tc&wmeis@saic.com
Subject: Clean up Hanford, Please

Mary Beth Burandt
Document Manager
U.S. Department of Energy
Office of River Protection
P.O. Box 1178
Richland,WA 99352
Fax: 888-785-2865
Email:TC&WMEIS@saic.com

Dear Ms. Burandt:
I live downriver from Hanford, in the lower Columbia area, Clatskanie specifically. I urge DOE to : *26-1*

1) Clean up all 55-million-gallons of radioactive + hazardous tank waste with over 99% retrieval

2) Drop the proposal to ship radioactive wastes, and any other hazardous wastes, from across the nation to Hanford *26-2*

3) Clean up the millions of gallons of nuclear waste that has already leaked + is reaching the Columbia

The Columbia is an amazing, huge waterway, connected to Canada and the ocean. It is the habitat of the great salmon, as well as the habitat of fishermen, elk, the ancient sturgeon, deer, raptors, frogs, an irreplaceable diversity of life, already damaged by pollution of many kinds, including leaching nuclear waste. Humans have no right to destroy the environment, to foul the nest in the quest for money, power, and the unremitting replication of their own offspring. We must understand the limits of nature to adapt to the concept of "waste". We must learn how to use and recycle or not use, if we cannot figure out how to detoxify leftovers. We must push back against the forces that would destroy all that is good and healthy and beautiful in their lust for More, more, more, bigger, faster, and MORE. *26-3*

26-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. DOE's preferred retrieval option (i.e., to retrieve at least 99 percent of the tank waste) is consistent with the TPA goal of residual waste not exceeding 10.2 cubic meters (360 cubic feet) for 100-series tanks or 0.85 cubic meters (30 cubic feet) for the smaller 200-series tanks, corresponding to 99 percent retrieval.

Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

26-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

26-3 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms in order to prevent further contamination from entering the environment. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 26 (cont'd): Mary Duvall

The river is a great flowing goddess who can give life, joy, hope----a future---or she can be destroyed because she is vulnerable---she is just there, awesome, beauty beyond beauty. It is our job to love her and protect her, keep her clear, clean, alive, and safe. ***26-3 cont'd***

Please help.
Thank you.
Mary Duvall
73151 Lost Creek Road
Clatskanie, Oregon
97016

Response side of this page intentionally left blank.

Commentor No. 27: Don Stephens

From: shreddad [shreddad@gmail.com]
Sent: Sunday, January 31, 2010 8:54 PM
To: tc&wmeis@saic.com
Subject: Clean up Hanford - Don't make it a national waste dump

Dear Decision Makers:

I am writing to urge you to stop use of Hanford as a national waste dump. Also, I oppose USDOE's plan to abandon the contamination that has leaked from the High-Level Nuclear Waste Tanks even as it is spreading rapidly towards the Columbia River. *27-1* *27-2*

Thank You.

Don Stephens
908 SE Cora
Portland, OR 97202

27-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Although different aspects of the Hanford environment (e.g., vadose zone or groundwater) may be regulated under different state and Federal statutes, the TPA agencies (DOE, Ecology, and EPA) coordinate their respective activities. Further, DOE included ongoing and planned remediation actions regarding existing contamination in the cumulative impacts analysis of this final EIS.

27-2 This contamination has not been abandoned. Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 28: Valerie Shubert

From: Valerie Shubert [treraia@gmail.com]
Sent: Monday, February 01, 2010 4:00 AM
To: tc&wmeis@saic.com
Subject: Draft TC&WMEIS Comments, pt II

Some additional comments, after having read part of the summary:

First, a grammatical quibble. The plural of 'right-of-way' is 'rights-of-way, not 'right-of-ways'. Please correct this wherever it occurs. *28-1*

Second, it appears that there're plans afoot to keep several facilities open 24 hours. To make this functional, several steps have to be taken: {(a) Seek out and hire (where possible) people who are naturally nocturnal. Such people exist, and will work better in these shifts. This means things like holding interviews, meetings, etc when nocturnal people can make them, not during 'business hours'. (b) Provide accommodations for employees working at night. This includes (but is not limited to): Adequate lighting which is not dazzlingly bright; mass transit that runs all night; break rooms, food service, bathrooms, etc that are available 24 hours; etc. It should go without saying that emergency services, medical services, at least some contact with administrators, etc would also be available 24 hrs/day, but my experience is that it does not go without saying, so I'm saying it.} *28-2*

Third, I've pointed out before that surveys of things like archaeological sites can be done via aerial and/or satellite photos. If no current photos exist, old photos are adequate, unless they have faded over time. *28-3*

This is all for the present: I will have more comments later. I repeat the caveat that the comment period is too short: but I will try to get comments in when and as I can. *28-4*

Valerie Shubert
1420 Western, #409
Seattle, WA 98101

28-1 The grammatical error in the text box in the draft Summary, Section S.5.5.1, page S–108, has been corrected to "rights-of-way." A global search has been performed in this final EIS, and any additional occurrences have been corrected.

28-2 Throughout Hanford's history, there have been operations requiring 24-hour-per-day work. DOE would ensure that future shift work continued to comply with applicable labor regulations for providing a safe work environment, such as those of Occupational Safety and Health Administration (OSHA) and the Washington State Department of Labor and Industries. Safety and ergonomic considerations specific to night shift work would be based on Hanford's past operational experience and worker input.

28-3 Archaeological site surveys referenced in this EIS contain data from various research documents. Many of these surveys do contain photos of the sites. While aerial photos are a part of the surveys, cultural resource specialists directly surveyed the areas potentially affected by proposed project activities.

28-4 The public comment period was extended by another 45 days, for a total comment period of 180 days.

Commentor No. 29: John Wood

From: John Wood [unclebob@gorge.net]
Sent: Monday, February 01, 2010 4:38 PM
To: tc&wmeis@saic.com
Cc: Columbia Riverkeeper
Subject: Hanford Cleanup: You cannot store waste in a bucket with a hole in the bottom.

Mary Beth Burandt
Document Manager
U.S. Department of Energy
Office of River Protection
P.O. Box 1178
Richland,WA 99352
Fax: 888-785-2865
Email: TC&WMEIS@saic.com

Dear Ms. Burandt,

My opinion and my desires on the Hanford cleanup are exactly what is proposed by Columbia Riverkeeper. You have no business trying to "store" waste in a bucket with a hole in the bottom. Especially if that waste is radioactive and draining into an enormous river headed for irrigation users and cities and the ocean. It is like peeing in a sock over a precious carpet. Nobody decent does it. ***29-1***

1) Clean up all 55-million-gallons of radioactive and hazardous tank waste with over 99% retrieval. ***29-2***

2) Drop the proposal to ship radioactive wastes from across the nation to Hanford. ***29-3***

3) Clean up the plume of millions of gallons of nuclear waste that has already leaked and is reaching the Columbia River. ***29-4***

It is true that man may "need" to resort to nuclear power in the future, but even coal is cleaner in the long run than spent but still radioactive nuclear fuel. Coal will spontaneously REFORM before nuclear waste emissions recede to background levels.

Thanks for your time,

John Wood
Hood River, Oregon

29-1 All 29 SSTs have now been interim-stabilized, and all work required to be performed under the Interim Stabilization Consent Decree (No. CT-99-5076-EFS, September 30, 1999, as amended) has been completed and confirmed. As a result, the court granted the joint motion to terminate the Consent Decree on March 8, 2011.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

29-2 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

29-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

29-4 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones.

Commentor No. 30: Sheryl Paglieri

1-31-10

To: Mary Beth Burandt, EIS Document Manager

Dear Mary Beth,

The No action alternative should be the Preferred alternative for the FFTF in the Draft Tank Closure and Waste Management EIS. Entombing the FFTF would be a huge waste of taxpayer money. The FFTF should be kept for possible future use. *30-1*

Yours truly
Sheryl D. Paglieri, retired teacher

Mead

30-1 DOE issued a ROD (66 FR 7877; January 26, 2001) for the *NI PEIS* (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated. As discussed in Chapter 1, Section 1.4.2, Decisions Not to Be Made, DOE is not considering restarting FFTF, only decommissioning it. Thus, regardless of the alternative selected (including No Action), FFTF would not be available for future use.

Commentor No. 31: James Paglieri

Jan. 30, 2010

Mary Beth Burandt, EIS Document Manager
DOE Draft TC&WM EIS Comments
Office of River Protection
PO Box 1178
Richland, WA 99352

Dear Mary Beth Burandt, EIS Document Manager,

The No Action Alternative should be the preferred alternative for the FFTF. The investment in the FFTF physical plant exceeds one billion dollars. The FFTF should not be entombed but should be preserved for various possible future missions, including restart. Since shutdown of the FFTF there has been increasing needs for fast neutron testing of materials (as noted by the present head of the DOE), for transmutation of nuclear waste (with the decision to not use Yucca Mountain), increased demand for medical isotopes (e.g. the recent crisis with Molybdenum-99 supply), and the inadequate supply situation for Plutonium-238 fuel for use in space missions. *31-1*

If FFTF restart does not materialize, the facility should be preserved for other reasons. For example, future nuclear or non-nuclear work that needs a containment building or that would use the tallest hot cell outside of Russia could be utilized. If no future use arises, the FFTF should become a nuclear museum and library, emphasizing the history of fast reactors and covering the development of nuclear power. For example, the museum could cover the number of awards that the FFTF received and the number of records that FFTF set, including a world record for the maximum amount of nuclear fuel exposure. FFTF could preserve fast reactor related documents/information and could become a favorate stopping place for the numerous visitors to the B-Reactor Museum. *31-2*

In conclusion, the No Action Alternative for the FFTF is very highly recommended. *31-1 cont'd*

Sincerely,
James N. Paglieri, Retired Nuclear Safety Engineer
James N. Paglieri
1734 Horn Ave.
Richland, WA 99354-2314

31-1 Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

31-2 DOE issued a ROD (66 FR 7877; January 26, 2001) for the *NI PEIS* (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated. As discussed in Chapter 1 of this *TC & WM EIS*, Section 1.4.2, Decisions Not to Be Made, DOE is not considering restarting FFTF. The scope of this *TC & WM EIS* is to address the final decommissioning of FFTF. As addressed in Chapter 2, Section 2.6, DOE does not consider use of FFTF as a museum a reasonable alternative due to the radiological and unique chemical hazards associated with the facility, the age of the buildings, and the lack of a financial sponsor.

Commentor No. 32: Fred Mann

From: Fred Mann [FredMMann@charter.net]
Sent: Thursday, February 04, 2010 4:18 PM
To: tc&wmeis@saic.com
Subject: Comments on the Draft TC & WM EIS
Attachments: Comments on Tank Closure EIS.docx

For more information, contact Fred Mann
email: FredMMann@charter.net
phone: (xxx)xxx-xxxx.

Response side of this page intentionally left blank.

Commentor No. 32 (cont'd): Fred Mann

Comments on Tank Closure, FFTF, and Waste Management EIS - Fred Mann
Dec. 10, 2009

Key Comments

1. Purpose of comments
   - A. Improve information for decision makers
   - B. Correct standard for Hanford
   - C. Improve readability

2.(A) Data/methods used are briefly described, but there is no discussion of why such data/methods are appropriate. Need to explain why they are appropriate. An example is inventory where the BBI is described as the official estimate. **Suggested change: Describe why data/methods used are appropriate.** *32-1*

3.(A) As most data come from 2002/2003, explain how newer data/methodology would affect results. For example, the discussion on updated Best Basis Inventory showed the large change in inventory. **Suggested change: Present a discussion on how more recent data would qualitatively affect the analysis performed.** *32-2*

4.(A) Separate cases that do not change from those cases where alternatives are given (e.g., off site waste, releases from near-by facilities). Because the impacts of the non-changing cases are much larger the cases having alternatives, the impacts of the alternatives cannot not be inferred by the reader. **Suggested change: Present the non-changing cases separately from the non-changing cases.**

   i. Most significant sources in many alternatives are cribs/trenches. past leaks. and offsite waste. Yet there are no alternatives no these sources. Thus, alternatives show large impacts as major sources are not reduced. **Suggested change: Provide alternatives for Cribs/trenches, past leaks, and offsite waste.** *32-3*

   ii. Cribs/trenches. These facilities are separate from the tank farms and are managed by a different office. Although they may be covered by a barrier that also covers tank farms, they may not. **Suggested change: include cribs/trenches as part of cumulative analyses (as obviously they will have a large impact) but not in alternatives analysis. If cribs/trenches are kept as part of the alternatives analysis, include two alternatives: 1) clean closure (in analog with clean closure of tank farms) and 2) pump and treat groundwater (which is the current plan being implemented by DOE Richland Operations Office).**

   iii. Past leaks. An alternative is presented (clean closure). However, Hanford DOE's plan (and is presently being implemented around the T, TX, and TY Tank Farms) is pump and treat of groundwater. **Suggested change: The pump and treat** *32-4*

32-1 This *TC & WM EIS* was prepared in accordance with NEPA, as amended (42 U.S.C. 4321 et seq.); DOE implementing procedures for NEPA (10 CFR 1021); and CEQ "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" (40 CFR 1500–1508). Methods for assessing environmental impacts for each resource area are discussed in Appendix F of this EIS. Inventory development is discussed in Appendices D (alternatives) and S (cumulative impacts). The 2002 BBI estimate was reviewed by ORP; DOE-RL; DOE Office of Health, Safety, and Security; DOE-EM; DOE Office of the General Counsel; and Ecology in 2005. The conclusion then, and now, is that the 2002 BBI is appropriate for the analysis in this *TC & WM EIS*.

32-2 DOE's decision to use the 2002 BBI for tank waste inventory data is based, on part, the results of a 2005 ORP; DOE-RL; DOE Office of Health, Safety, and Security; DOE-EM; DOE Office of the General Counsel; and Ecology review of the 2002 BBI estimates. Regarding the commentor's concern as to the usage of older data when newer data are available, DOE reexamined the inventories used in this *Final TC & WM EIS* and determined that the best-available data were used in the analysis, with the understanding that uncertainty still remains. For a more comprehensive discussion of this topic, see Section 2.2 of this CRD.

32-3 The agency does not agree with the suggested approach for organizing the alternatives. DOE believes that the impacts of cribs and trenches (ditches), past leaks, and offsite waste can be distinguished among the alternatives as presented. To provide additional clarification on the potential impacts of past leaks, cribs and trenches (ditches), and offsite waste under each of the alternatives, DOE has revised the key environmental findings sections of the *TC & WM EIS* Summary (Section S.5.5) and Chapter 2 (Section 2.10) to provide more description and discussion of these impacts.

32-4 The clean closure alternatives considered for the SST system are represented by the Base and Option Cases of Tank Closure Alternatives 6A and 6B. For both Base Cases, the assumption is that the SST system would be cleaned to levels that would allow for unrestricted use, which would involve removal of the tanks, ancillary equipment, and soils beneath the tanks (contaminated as a result of past leaks) down to the water table. The two Option Cases represent this type of clean closure along with removal of soils beneath the tank farms (contaminated as a result of the contiguous cribs and trenches [ditches]). The analysis shows that removal of the contaminants from the vadose zone would not capture the

Commentor No. 32 (cont'd): Fred Mann

alternative being implemented by Hanford DOE should be considered as part of the EIS.

32-4 cont'd

iv. Off-site waste. The only case analyzed in the EIS is for the disposal site to start receiving waste in 2009. However, the preferred alternative is not to receive offsite waste until the Waste Treatment Plant (WTP) is operational (~2020). Given the discussion of inventory in the text, at least half of the off-site waste will be disposed prior to this time. **Suggested change: Add alternatives of 1) waste disposal starting after WTP is operational and 2) no offsite waste.**

32-5

5.(A) Impacts from Tank Farm Closure and Waste Disposal are provided separately. Yet the alternatives have them as part of the same alternative. Moreover, the points and times of impacts overlap. Because some sources will overwhelm other sources, it is important that each source be individually calculated and explained. **Suggested change: Provide impacts from key sources (as well as a discussion). Then merge the impacts (and create new discussion) to address each of the alternatives.**

32-6

Detailed Comments

Page S-87 The beginning discussion on Tank Closure Alternatives (S.5.4.1) and particularly Figure S-14 only present alternatives for residual waste (i.e., different retrieval fractions). However, the main text makes clear that past releases have much more of an impact as do waste near, but outside the tank farms. **Suggested change: At the beginning of S.5.4.1 include a new paragraph that list the subheadings with a short description of peak environment impacts. A side box describing the alternatives would also be useful. For each figure S-14, S-15, S-16, and S-18, note the figures where the impacts from other sources can be found.**

32-7

Page S-96: The intent of Figure S-18 and the associated text on pages S-94 through S-96 seems to be to summarize the environmental impacts for closure of the SST system. Thus, to understand the environment impact from each alternative, the reader needs the environmental impact from each of the sources for each alternative. Figure S-18 should have the impacts from past leaks as they are part of closure. Whether one includes the impacts from near-by sources should be considered (However, as these are not part of the closure of the SST System, I would urge not to include nearby sources - see above). **Suggested change: Include all sources for each alternative (i.e., past leaks as well as residual waste and retrieval leaks) in Figure S-18 and in the associated text.**

32-8

Page S-99 and S-100 (Figures S-20 and S-21). The point(s) of calculation are general at the Core Zone Boundary. However, the point(s) of calculation for Figures S-20 and S-21 are at the 200 East Area Integrated Disposal facility Barrier. There is no explanation why the change is made. **Suggested change: Be consistent. Present data for the same**

32-9

contaminants that may have already reached the water table due to past practices, i.e., past leaks and infiltration from contiguous cribs and trenches (ditches).

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

32-5 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

32-6 DOE believes that both the individual alternatives (i.e., Tank Closure alternatives and Waste Management alternatives) and the combinations of the alternatives are discussed and explained. Chapters 4 and 5 of this *TC & WM EIS* provide individual results for short- and long-term impacts, respectively, for each resource area and the combinations of the Tank Closure and Waste Management alternatives are provided at the end of Chapters 4 and 5 (i.e., Section 4.4, Combination of Alternatives, and Section 5.4, Combination of Alternatives).

32-7 The commentor's suggestions were considered during the preparation of the Summary for this *Final TC & WM EIS* and DOE has taken efforts to try to provide more clarifying information as needed.

32-8 The Summary presents an overview of key environmental findings. To see all sources for each alternative, please see Chapter 5 of this EIS. Please see the Summary for discussion regarding closure of the SST system past leaks.

32-9 IDF barriers were used as the point of calculation in the figures because they are the permitted points of interest for the Waste Management alternatives chosen by Ecology to meet State Environmental Policy Act (SEPA) and permit requirements. The permitted points of interest for the Tank Closure alternatives are the tank farm barriers and the Core Zone Boundary, which is used for multiple sources, including the tank farms.

Commentor No. 32 (cont'd): Fred Mann

point(s) of calculation (so that comparisons can be made). If additional point(s) of calculation are presented, make sure that the reader is clearly informed that a change has been made.

32-9 cont'd

Page S-106. Table S-11 uses floating point notation, making comparisons difficult. Moreover, the layreader understands better fixed point notation. **Suggested change: Use fixed notational rather than scientific notation as space is not a problem and would by more understandable for the lay reader. (thus 0.246 million -> 246,000 and $1.07x10^4$ -> 10,700.**

32-10

Pages S-112 to S-115 The costs are presented in a variety of units and in scientific notation, making understanding by the layreader difficult. **Suggested change: Use millions of dollars for cost (not 10^6 and 10^9). Not only would this be more understandable for lay reader, but would allow easier comparison as reader would not need to convert superscripts 6 and 9.**

32-11

Page 5-5 and others. Figure 5-2 and other figures used the phrase "other sources". All the alternatives deal with these other sources. This seems to be tank farm residuals. **Suggested change: Clearly state what are the other sources.**

32-12

Page 5-8 states that only 3% of the tritium in the groundwater reaches the Columbia River. This implies that the amount of tritium is reduced by a factor of 33 or by $\sim 2^5$. As the half-life of tritium is ~13 years. Calculated groundwater travel time would by ~65 years. Given past estimates of much faster travel time, an explanation is needed. **Suggested change: Have a section comparing calculated values with measurements.**

32-13

Page 5-9, the text states "Therefore, attempts to apply classic transport theory to these results can, in general, result in misleading conclusions." Yet it was classical transport theory that generated the results. Simply interpolating or extrapolated results can be misleading because of the multiple sources. **Suggested change: change sentence to read: " Therefore, attempts to simply interpolate or extrapolate these results can, in general, result in misleading conclusions."**

32-14

Figures 5-8 through 5-12 provide calculated values covering 1940 to the present. Yet there is no discussion on how these calculated values compare with measured values. Without such a comparison, it is impossible for the reader to judge the quality of the calculations, particularly as the input data were not necessarily selected to present the best available data. **Suggested change: add a many page section comparing the results to the extensive Hanford Site measurement data base.**

32-15

Page 5-11. Beside the extensive Hanford Site measurement data base, there have been many previous calculations. **Suggested change: To provide reader knowledgable of such**

32-16

32-10 Table S–11 in the *Draft TC & WM EIS* Summary and Table 6–37 in Chapter 6 of the draft EIS have been revised in this final EIS to put the carbon dioxide emission data in decimal format, as suggested by the commentor.

32-11 Because of the wide range of potential costs, the higher Tank Closure alternatives costs are presented in this *TC & WM EIS* in billions of 2008 dollars, whereas the lower FFTF Decommissioning and Waste Management alternatives costs are presented in millions of 2008 dollars. These units are specified in the title of each cost table in Chapter 2, Section 2.11, and the Summary, Section S.6. However, no cost figures are presented in these sections using scientific notation. Cost figures are typically not listed in scientific notation, but rather are presented in dollar amounts consistent with the format used in this *TC & WM EIS*.

32-12 The term "other tank farm sources" includes tank residuals, retrieval leaks, and ancillary equipment. These sources were analyzed together. Clarification has been provided in Chapter 5 of this *Final TC & WM EIS*.

32-13 The purpose of Chapters 5 and 6 is to provide information that compares the impacts of various alternatives. By design, results in Chapter 5 are comparable to each other, because they are based on the specifics of individual alternatives or alternative combinations. The results in Chapter 5 do not include contributions from cumulative impact sources, which are currently a contributor to the contamination in the aquifer. The comparison between modeled and measured results is presented in Appendix U, which includes all sources; in response to similar comments, this discussion has been expanded in this *Final TC & WM EIS*.

As a point of clarification, DOE notes that peak hydrogen-3 (tritium) concentrations in calendar years 1980, 1990, 2000, and 2010 compare favorably (well within an order of magnitude) with observed field measurements. First arrival times of the tritium plume at the nearshore of the Columbia River also compare favorably with field observations. DOE notes that first arrival times of tritium at the nearshore of the Columbia River on the order of 60 to 70 years are consistent with a finding that the majority of tritium (from all disposal sites) undergoes radioactive decay while transiting the vadose zone and groundwater system.

32-14 The sentence has been revised accordingly.

32-15 Please see response to comment 32-13 regarding the purpose of Chapters 5 and 6 and their relationship to Appendix U. Except for a few specific sources discussed in Appendix U, the agreement between modeled results and measured conditions

Commentor No. 32 (cont'd): Fred Mann

previous work, such earlier work should be referenced and compared to the present calculations.

32-16 cont'd

Page 5-11. The text states "Releases from cribs and trenches ... . Releases from other tank farm sources ...". However, cribs and trenches have not been managed as tank form sources since the establishment of the Office of River Protection and for many years prior to that. **Suggested change: change text to "Releases from tank farm sources ...".**

32-17

Figures 5-8 through 5-12 show very large spikes and dips. Some spikes exceed 10^3; some dips exceed 10^5. For example, if smooth over 10 years, then Figure 5-8 would look quite different. **Suggested change: The text should explain the origin of such departures from smooth behavior. If the spikes are the results of calculations but not of reality, then replot data over a suitable period.**

32-18

Figures 5-15 and 5-16 show the calculated groundwater spatial distribution of tritium and iodine-129 in the year 2005. However data are not given for techneitum-99 and uranium, the major contaminants of concern in the analysis. More importantly, the calculated values are not compared to measurements**. Suggested change: Show the calculated and measured groundwater spatial distribution of tritium, technetium-99, iodine-129, and uranium in the year 2005.**

32-19

Page 5-16. The phrases "T barrier", "B Barrier, and "A Barrier" have not been defined in Chapter 5. **Suggested change: Define the "T barrier", "B Barrier, and "A Barrier" here.**

32-20

Page 5-16. The text states "... as a result of other tank farm sources ...". It is unclear what sources are meant. **Suggested change: Instead of using "other tank farm sources", state what sources are included.**

32-21

Page 5-35. The text states "The retrieval period was assumed to start in 2008 and end in CY 2193." Current plans are to close the tank farms (including retrieval) prior to 2050. No one has suggested a retrieval period of ~200 years. **Suggested change: Change "retrieval period" to "operational period" or another phrase.**

32-22

Page 5-38. Figure 5-39 has the release (curies) from U-238 as ~1.0 Curie (cribs and trenches), ~3 Curies (past leaks), and ~1.0 Curies (other sources). However, Figure 5-40 has the release (kilograms) for uranium as ~0.3 Mg (cribs and trenches, ~3 Mg (past leaks), and ~1 Mg (other sources). However, the uranium is depleted of isotopes other than U-238, thus the ratio for the 2 between the figures for each source should be the same (not 3, 1, 1 Curies/Mg). **Suggested change: look at data and replot.**

32-23

Page 5-69. Section 5.1.1.3.1 present summaries of the proposed action and timelines for Tank Closure Alternative 2B. The similar summary for Alterative 2A is 34 pages earlier in

32-24

is generally within a close order of magnitude. This overall agreement suggests that differences in long-term groundwater impacts that are greater than an order of magnitude should be considered significant in comparing the alternatives.

32-16 In response to this and similar comments, Appendices N and O have been expanded to include discussions of previous studies having a bearing on this NEPA evaluation.

32-17 Releases from other tank farm sources include releases from HLW tanks, including tank residuals, retrieval leaks, and ancillary equipment. In response to this and similar comments, the discussion in Chapter 5 of this *Final TC & WM EIS* has been clarified.

32-18 In response to this and similar comments, an expanded discussion of the causes of variability in the concentration versus time plots has been added to Chapter 5 of this *Final TC & WM EIS*.

32-19 Please see response to comment 32-13 regarding the purpose of Chapters 5 and 6 and their relationship to Appendix U.

32-20 A reference to the barrier boundaries used for the analysis was mentioned in the introductory text of Chapter 5. However, to provide more clarity, this language has been expanded.

32-21 Releases from other tank farm sources are releases from HLW tanks, including tank residuals, retrieval leaks, and ancillary equipment. In response to this and similar comments, the discussion in Chapter 5 of this *Final TC & WM EIS* has been clarified.

32-22 Chapter 5, Section 5.1.1.2.1, has been revised to clarify that the retrieval period under Tank Closure Alternative 2A includes retrieval, WTP pretreatment and treatment, and 100 years of administrative and institutional control. For clarification, this change is applicable to Alternative 2A, not Alternative 2B.

32-23 DOE conducted a detailed review of available inventory data and believes the inventory estimates analyzed in this EIS represent the best-available data at the time of its publication. None of the reviewed documents included a total uranium inventory estimate for many of the burial grounds or some liquid-waste sites. However, in response to this and similar comments, DOE reviewed the data again and revised the inventories to include a calculated total uranium inventory. This revised inventory was analyzed in this *Final TC & WM EIS*; specifically, Appendix S was revised to include these inventories for each of the affected sites.

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Section 5.1.1.2.1. **Suggested change: Add a paragraph summarizes the differences between Alternatives 2A and 2B. Also (per comment above), change "retrieval period" to "operational period" or another phrase.**

32-24 cont'd

Page 5-172, the text states "For the conservative tracers, concentrations at the Core Zone Boundary exceed benchmark standards by two to three orders of magnitude during most of the periods of analysis." Yet the corresponding figures (Figures 5-153, 5-154, 5-155, 5-156, and 5-157) show that except for near the beginning of the analysis, the concentrations are at most an order of magnitude over the benchmark (except for Tc-99 where the margin is 1 1/2 orders of magnitude from 3700 to 5000). **Suggested change: Make the text consistent with the figures with the calculated impacts.**

32-25

Page 5-172, the text states "Concentrations at the Columbia River are about two orders of magnitude smaller." ." Yet the corresponding figures (Figures 5-153, 5-154, 5-155, 5-156, and 5-157) show that the impacts at the Columbia River at one magnitude smaller, except for I-129 which is about a factor of 30 smaller and impacts for Tc-99, Cr, and nitrate at around the year 4000 that is also a factor of 30. It is unclear why I-129 behaves differently. **Suggested change: Make the text consistent with the figures with the calculated impacts. Explain the different ratio for I-129 and around the year 4000.**

32-26

Page 5-310. In Figure 5-325 the blue curve disappears under the tan. **Suggested change: State in the caption that after Year 2500 "other sources are not significantly different from the total." A similar sentence can be used for other figures.**

32-27

Page 5-316. The text states "The dose standard", but this phrase is not defined in particular for the American Indian resident farmer. Similarly for "hazard index guidance". **Suggested change: define phrase and give numerical value.**

32-28

Page 5-318 and on. Tables 5-22 and so on provide peak impacts. However, the corresponding figures show that the peak impacts occur shortly after 1940. **Suggested change: As the purpose of an EIS is do decide among future alternatives, peak impacts should be provided for years after the data of publication (2009).**

32-29

Page 5-318 and on. Tables 5-22 and so on include the impacts from cribs and trenches. These impacts according to the figures drive peak impact levels (because of the very high values early on). Therefore, differences among the alternatives are lost**. Suggested change: Do not include the impacts from cribs and trenches, particularly as they are not managed as tank waste.**

32-30

Page 5-422 and on. Figures 5-376 and on provide releases. However, the releases are only for the first 10,000 years. **Suggested change: For all release figures, but particularly for those involving sources having long-term releases, add the phrase "during the 10,000 year time of analysis."**

32-31

32-24 The information the commentor is requesting is presented earlier in this *TC & WM EIS*. Specifically, summaries of the proposed action and timelines for Tank Closure alternatives are presented comparatively in Chapter 2, Section 2.5.

32-25 DOE agrees with the commentor's characterization of these ratios and has revised the text in this *Final TC & WM EIS* accordingly.

32-26 DOE agrees with the commentor's analysis with respect to the ratio between Core Zone Boundary and Columbia River concentrations and has revised the text accordingly in this *Final TC & WM EIS*. Under Tank Closure Alternative 5, differences in the ratio for iodine-129 around year 4000 are attributed to the release from tank farm residuals that starts about this time, as tank farm residuals are a grouted waste form (note that Tank Closure Alternative 5 has only 90 percent retrieval, and, thus, a larger portion of the total inventory for each tank farm is available for release than under other Tank Closure alternatives). The discussion of this result has been expanded in this *Final TC & WM EIS*.

32-27 In response to this and similar comments, the data presentation in Chapters 5 and 6 has been revised in this *Final TC & WM EIS*. Specifically, in cases where there is a superposition of curves that obscures part or all of the information, the accompanying text contains a discussion of the obscured information.

32-28 Please see Appendix Q for the dose standard used in this *TC & WM EIS*. Please see Chapter 9 for the definition and numerical value of the Hazard Index.

32-29 As described on page 5–317 of the *Draft TC & WM EIS*, Tables 5–22 and 5–23 show the impacts from cribs and trenches (ditches) after calendar year 1940; and Tables 5–24 and 5–25 show the impacts from the past leaks after calendar year 1940. However, Tables 5–26 and 5–27 show the impacts from the combination of cribs and trenches (ditches), past leaks, and other tank farm sources after calendar year 2050. Appendix Q provides more detail and explanation for using the calendar date 2050.

32-30 The impacts of six sets of cribs and trenches (ditches) cannot be removed from the analysis because they are contiguous to the SSTs and would fall under the barriers placed over the SSTs during closure. These cribs and trenches (ditches) are CERCLA past-practice units and are evaluated in this EIS as part of a connected action because they would be influenced by barrier placement. Please see Chapter 1, Section 1.4, Decisions and Regulatory Framework, for more information on cribs and trenches (ditches). DOE disagrees that differences among the alternatives would be lost, because the same assumptions about the cribs and trenches were used for all alternatives.

Commentor No. 32 (cont'd): Fred Mann

Page 5-428 and on. Impacts from Integrated Disposal Facility exceed benchmarks because of the inclusion of off-site waste, which is very conservatively estimated. There is only one case analyzed for off-site waste and that case is inconsistent (much higher) than the preferred alternative. **Suggested change: Redo the Integrated Disposal Facility Alternatives calculations with the inventory corresponding to the preferred alternative.** *32-32*

Appendix C. A key document used in the EIS is the "EIS Technical Guidance Document TC EIS Vadose Zone and Groundwater Revised Analyses**". Suggested change: Include entire document in Appendix B or C.** *32-33*

Page D-2. The text states that information after December 1, 2002 are not included. However, section D.1.1.5 does describe new information and shows significant changes in Tc-99 and I-129 inventories. **Suggested change: Include a reference to Section D.1.1.5 for newer information.** *32-34*

Page D-15 states "Three levels of retrieval were considered for the TC & WM EIS analysis: 90, 99, and 99.9 percent retrieval of current inventory of radioactive and nonradioactive constituents." as well as "Nine-nine percent retrieval is in the TPA." However, The ninety-nine percent retrieval in the TPA refers to capacity, not current inventory. Thus, the text misleads the reader into assuming that the inventory used in the EIS is comparable to the TPA, rather than being on average about a factor of 2 lower, and in some cases an order of magnitude lower. **Suggested change: replace "Nine-nine percent retrieval is in the TPA." with "The TPA requires on average 99. % retrieval based on capacity, not on inventory as of 2002. Thus, TPA-compliant inventories may be twice as high as used in the EIS 99% case."** *32-35*

Page D-16 states the decision to use volume retrieval method. However, 7 tanks have been retrieved with the composition of the residual waste actually measured. **Suggested change: Add a short discussion of the reliability of the volume retrieval method with actual experience.** *32-36*

Page D-24 discusses historical leaks. However, much information has been obtained since December. **Suggested change: Just as for the Best Basis Inventory (discussed in Section D.1.1.5), there should be a discussion on how new data affects inventory data.** *32-37*

Page D-26 states that inventories for cribs and trenches, which are outside of tank farms, come from 2005 source. However, data for inventories inside tank farms (one of the main focuses of the EIS) are from 2002 sources. **Suggested change: Tank farm inventories should come from the same date or more recent dates than for non-tank farm sources.** *32-38*

32-31 The first sentence in each section describing the "analysis of release and mass balance" clarifies that the section presents the impacts in terms of release during the 10,000-year period of analysis.

32-32 In response to this and similar comments, additional analyses of IDF performance have been conducted and are presented in Chapter 7, Section 7.5, of this *Final TC & WM EIS*. The additional analyses consider changes in predicted impacts as a function of the inventory of LLW and MLLW imported from off site.

32-33 The *Technical Guidance Document* (DOE 2005) and other document sources are referenced where applicable in both the main document chapters and in the appendices, and are available on the Hanford website (http://www.hanford.gov). Specifically, the *Technical Guidance Document* can be found under the Scoping heading on the Tank Farm Closure & Waste Management Environmental Impact Statement page, which is listed in the NEPA – Environmental Impact Statements subsection of the Official Documents page.

32-34 A reference to the BBI comparison in Appendix D, Section D.1.1.5, is not considered necessary as it is a subsection of Section D.1.1, follows within a reasonable number of pages, and doing so may be confusing to the reader.

32-35 Concerning the disproportionate amount of radioactivity in the residues at the bottom of the tanks, DOE currently does not have a technical basis for making more-specific assumptions about the expected compositions of the waste "heels" that would remain in the tanks after retrieval. Retrieval has been completed for only a small number of SSTs, and not much is known about the behavior of, or ability to remove, small volumes of residual waste. However, the tank closure process, which includes detailed examinations of the tanks, residual waste, and surrounding waste in the soil, requires preparation of detailed performance assessments and a closure plan. These documents will provide the information and analysis necessary for DOE and the regulators to make specific decisions on what levels of residual tank waste are acceptable in terms of short- and long-term risks.

32-36 DOE notes the commentor's recommendation to add a discussion on the reliability of using the volume retrieval method in lieu of actual experience. Appendix D, Section D.1.3, concludes that the volume retrieval method for estimating the tank residual waste after retrieval is appropriate. Currently, retrieval has been completed on seven tanks, of which three were 100-series tanks and four were 200-series tanks. For the three 100-series tanks (C-103, C-106, and S-112), a review of the estimated residual technetium-99 inventory compared

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Page D-26 states "Recent field investigations conducted by Bechtel Hanford at the B-38 trench". However, Bechtel Hanford never did investigations at the B-38. Bechtel Hanford Company had responsibility for investigations near the Columbia River. CH2M HILL Hanford Group did such investigations. **Suggested change: Change "Bechtel Hanford" with "CH2M HILL Hanford Group".**

32-39

Page D-33 states that 2007 data are used for waste streams produced by the Waste Treatment Plant (WTP). However, tank farm data comes from 2002. Moreover the input to the 2007 flowsheet was not based on 2002 tank farm data (Best Basis Inventory) much much more current data. Thus tank farm data and WTP data will not be consistent **Suggested change: Tank farm inventories should come from the same date or more recent dates than for WTP sources.**

32-40

Page D-33 does not discuss Tc-99 not captured in the glass matrix, but is retained in the glass canister. The presence of such Tc-99 has been seen in WTP testing and the quantity has been estimated. Such Tc-99 for bulk vitrification waste forms is shown in the EIS to be more important that the Tc in the matrix. **Suggested change: Add a discussion on the amount of Tc-99 in WTP glass canisters that are not captured in glass matrix. Include such inventory in the WTP glass calculations.**

32-41

Page D-126. The text states that the inventory for off-site waste is from a 2006 report, but tank waste is from 2002. **Suggested change: Make inventory estimates from references of a similar date.**

32-42

Page D-127. The text states "Therefore, there are significant uncertainties in [off-site waste] waste volume projections ..." Moreover, from the analysis conducted, it is off-site waste that has the largest impacts. However, only one case is analyzed and it is not the prefered alternatives case. **Suggested change: Perform sensitivity cases to the amount of off-site waste.**

32-43

Page D-127 on. The text assumes operation of the Integrated Disposal Facility (IDF) starts in 2009. It is now 2009 and the facility is nowhere near operation. Moreover, DOE has agreed with the State of Washington that no offsite waste will be disposed in IDF until after the Waste Treatment Plan is operation (~2022) and this is part of the preferred alternative of this EIS. As discussed in the text, much (at least half) of the off-site waste assumed for disposal in IDF must be disposed prior to 2022. **Suggested change: Have preferred alternative as one of the off-site waste cases analyzed.**

32-44

Page L-5. The text states "Previously compiled data were used ... . When compiled date were unavailable or inadequate for the development methodology used, historical primary data were obtained and processed for use or additional data were collected." However, no references were provided. **Suggested change: provide references for previously compiled data, for historical primary data, and for additional data.**

32-45

with the expected inventory found inconsistencies between the three tanks and a wide range in the ratio of final curies to expected curies. From this review, DOE concluded that it currently does not have a technical basis for making more-specific assumptions about the expected compositions of the waste "heels" that would remain in the tanks after retrieval, and not much is known about the behavior of, or ability to remove, small volumes of residual waste.

As suggested, this discussion was added to Appendix D in this final EIS. It is also noted that the tank closure process, if implemented, would require detailed examinations of the tanks and residual waste, as well as preparation of site-specific radiological performance assessments and closure plans. These documents will provide the information and analysis necessary for DOE and the regulators to make specific decisions on what levels of residual tank waste are acceptable in terms of short- and long-term risks.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

32-37 DOE is not aware of any new historical leak data becoming available since December 2009. Thus, a comparison similar to the discussion regarding the BBI data was not included in this EIS.

32-38 To address this specific comment on the draft EIS questioning DOE's use of the 2002 BBI for tank waste inventory data, in 2005, ORP; DOE-RL; DOE Office of Health, Safety, and Security; DOE-EM; DOE Office of the General Counsel; and Ecology reviewed the 2002 BBI estimates. The conclusion then, and now, is that the 2002 BBI is appropriate for the analyses in this *TC & WM EIS*. This conclusion is supported in Section 4.0, Assumptions, in the *Technical Guidance Document* (DOE 2005), dated March 25, 2005, which was approved by DOE and Ecology. In summary, DOE and Ecology concluded that the 2002 BBI includes inventory values for both technetium-99 and iodine-129, two risk-driving radionuclides, that are at the higher end of the range of numbers based on the inherent uncertainty in the way the BBI is formulated. This use of some

Commentor No. 32 (cont'd): Fred Mann

Page L-5. The text describes the methodology of developing the groundwater, but nowhere is the underlying physical conceptual model provided. It is implied by the choice of MODFLOW, but should be made explicit for the (lay) reader. **Suggested change: provide the underlying physical conceptual model for the groundwater model.**

32-46

Page M-1. The text states "Although best available data and models are used to develop the analysis described in this appendix, ..." However, this is not true. Just one example (see below) is release of contaminants from glass matrix. The model used is a one-dimensional model that is now known to miss important processes (most contaminants flow around the glass matrix rather than through it) and the data are based on a glass formulation developed by the Pacific Northwest National Laboratory rather than for glass formulations developed by the Waste Treatment Plant. **Suggested change: Replace sentence with "Because of uncertainties in the data and models used, uncertainty in the results remain."**

32-47

Page M-14. Section M.1.3.1 provides inventories for past releases. Although it can be thought of a release mechanicism, normally most readers would treat it as inventory. **Suggested change: Discuss in the inventory appendix and provide a link to that section here in the release section.**

32-48

Page M-16. The text describes the release rate methodology for salt cake, but not for sludges. For the tanks that have been retrieved (all of which contain sludges), there are measured release rates. **Suggested change: Discuss methodology for sludges.**

32-49

Page M-18. The text states (twice) "detailed analysis using the STORM Model (Mann et al. 2003). Mann et al. 2003 is not a detailed analysis. The executive summary of that document states "However, because of budget, schedule, and technical limitations, this report is acknowledged to be less rigorous and detailed than a performance assessment, ...". **Suggested change: See new paragraph below.**

Page M-18. Mann et al. 2003 used a one-dimensional analysis forcing all contaminant through the glass matrix. Newer analyses by Diana Bacon and Pete McGrail (PNNL-15198) have used two-dimensional analyses which allow most of the contaminants to move around the glass matrix. Both the details of local environment parameters and the release results are much different. **Suggested change: See new paragraph below.**

32-50

Page M-18. The basis for much of the technical analysis (including release) is the "EIS Technical Guidance Document TC EIS Vadose Zone and Groundwater Revised Analyses". That document specifies 0.9 mm/year recharge rate. However, Mann et al used a recharge rate of 4.2 mm/yr. According to Mann et al. 2003, the release rate varies as (recharge)^6. Thus, using the EIS guidance document and the methodology of Mann et al. 2003, the release rate should be reduced by $(0.9/4.2)^6$ or $\backtick 10^{-4}$. However, the use of conservatism by using the higher number for two risk drivers is still considered appropriate for this EIS analysis. Regarding the use of the SIM [Hanford Soil Inventory Model], Revision 1, data for analysis of the cribs and trenches (ditches), dated 2005, as explained in Appendix D, Section D.1.5, DOE reviewed the available data and concluded these data are appropriate for the analysis in this *TC & WM EIS*.

32-39 The text was revised from "Bechtel Hanford" to "CH2M HILL Hanford Group" in this final EIS.

32-40 The only "2007 data" reference noted in Appendix D of the draft EIS is "CEES 2007b," which is a mass balance calculation that analyzes the 2002 BBI, not a newer source of inventory. The 2002 BBI estimate was reviewed by DOE, which concluded that it best represents the inventories of the SSTs and DSTs. Use of the 2002 BBI was agreed to by DOE and Ecology representatives in the *Technical Guidance Document* (DOE 2005) for this EIS. DOE believes consistent use of the 2002 BBI has been maintained throughout this EIS. For a more comprehensive discussion of this topic, see Section 2.2 of this CRD.

32-41 DOE is not aware that technetium-99 is retained on the ILAW glass canister walls. This EIS utilized the Hanford Tank Waste Operations Simulator model partitioning factors and assumptions to develop the Tank Closure alternatives mass balances.

32-42 The 2002 BBI estimate was reviewed by DOE, which concluded that it best represents the inventories of the SSTs and DSTs. Use of the 2002 BBI was agreed to by DOE and Ecology representatives in the *Technical Guidance Document* (DOE 2005) for this EIS. The offsite waste inventory was prepared in 2006 to support the draft EIS following DOE's January 6, 2006, Settlement Agreement with the State of Washington (as amended on June 5, 2008) regarding *State of Washington v. Bodman* (Civil No. 2:03-cv-05018-AAM), signed by DOE, Ecology, the Washington State Attorney General's Office, and DOJ. For a more comprehensive discussion of this topic, see Section 2.2 of this CRD.

32-43 The impacts of offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5, and Chapter 2, Section 2.10, Key Environmental Findings. These sections illustrate the radiological risk differences between including and not including offsite waste disposal at IDF-East. The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99,

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one-dimensional methodology in Mann et al. 2003 is not known to be incorrect. . **Suggested change: See new paragraph below.**

Page M-18. Mann et al 2003 used LAWABP1 as the glass composition. However, this composition is much different from the glass compositions planned to be used in the Waste Treatment Plant. . **Suggested change: See new paragraph below.**

Suggested change for above comments: A key guidance document for this EIS is the "EIS Technical Guidance Document TC EIS Vadose Zone and Groundwater Revised Analyses". This guidance document states "Waste sources to be evaluated for release functions in the TCEIS will include primary and secondary grouted waste, tank residual salt cake, liquid releases, and vitrified waste forms. Information on release rates from salt cake, grouted waste forms, and vitrified waste forms are available in *Risk Assessment Supporting the Decision in Initial Selection of Supplemental ILAW Technologies* (RPP-17675) and *Annual Summary of Immobilized Low Activity Waste Performance Assessment for 2003, Incorporating the Integrated Disposal Facility Concept*, (DOE/ORP-2000-19)." For this analysis, the glass release for WTP glass is taken as 2.8 x 10^{-8} (gram per gram) and 1.0 x10^{-8} for bulk vitrification glass based on the Annual Summary (here referenced as Mann et. al 2003). These values are consistent with newer data and methodology (Bacon and McGrail 2005). During the production of glass, a portion of the feed technetium is volatilized ..."

32-50 cont'd

Page M-18. Peer review is given as the reference for the upper limit for technetium in the castable block. This is not a reference. **Suggested change: provide a literature reference.**

32-51

Page M-18. Technetium not in the glass matrix is included for bulk vitrification (BV), but not for Waste Treatment Plant (WTP) glass. However, just as in bulk vitrification, Tc will evaporate from the glass melt from ~250 to ~500^{o} in WTP containers. Such white powder has indeed been seen in WTP tests. Moreover, because of the physical conditions, it can be expected that more Tc not in the matrix would be present in WTP product than in BV product. **Suggested change: include non-matrix Technetium in WTP glass.**

32-52

Page M-80. The text describes the effects of recharge on past leaks. However, nowhere is there a discussion of thermal effects. As shown by Steve Yabusaki in the SX Field Investigation Report (Knepp 2001), these thermal effects are very important (many orders of magnitude) if the modeling starts at the tank source. **Suggested change: The importance of such thermal effects should be acknowledged and quantified.**

32-53

Page N-2. The text presents a discussions of why alternatives on vadose zone flow and transport were not chosen. **Suggested change: such discussions should occur whenever the EIS Team made a decision on data or methodology.**

32-54

Pages N-2 and on. The comparisons between measurements and calculations are presented for sources having very high discharge or recharge rates. Yet the bulk of the alternatives

32-55

could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

32-44 For the purpose of analysis, Waste Management Alternatives 2 and 3 were revised in the *Final TC & WM EIS* to reflect the receipt of offsite waste starting in 2022.

32-45 In response to this comment, Appendix L of this *Final TC & WM EIS* has been modified to provide references to previously compiled data, historical primary data, and other data sources.

32-46 Appendix L, Section L.2, of this *Final TC & WM EIS*, has been revised to include a simple diagram and a brief description of the groundwater pathway conceptual model.

32-47 DOE does believe that the best-available data and models were used to develop the analysis for the *Draft TC & WM EIS* and disagrees that this sentence needs to be revised as suggested.

32-48 DOE disagrees with the commentor's interpretation of this section of Appendix M. Appendix M, Section M.3.1, provides a description of the volume estimates and dates for past leaks and refers the reader to Appendix D for the estimates of quantities of constituents involved in past leaks (i.e., inventories).

32-49 For alternatives involving abandonment of the tanks (Tank Closure Alternatives 1 and 2A), sludge phases were assumed to be encapsulated in salt cake and to be released by dissolution of the salt cake. Given the uncertainty in specification of tank failure and the large adverse impact of any release from an unstabilized tank, refinement of the release models for Alternatives 1 and 2A is not warranted. Stabilization of tanks occurs for all alternatives except Alternatives 1 and 2A. For those alternatives, residual salt cake and sludge were assumed to be diluted and mixed into the lower layer of grout placed in the tank.

32-50 The text of Appendix M, Section M.3.1, has been revised by removing the reference to level of detail in the analysis of the *Risk Assessment Supporting the Decision on the Initial Selection of Supplemental ILAW Technologies* (Mann et al. 2003) and stating that conditions used in that analysis, such as the rate of recharge at IDF-East, differ from the *TC & WM EIS* Base Case conditions, with expectedly conservative implications for predicted impacts.

Commentor No. 32 (cont'd): Fred Mann

analysis are for sources (residual tank waste or disposal facility waste) having low recharge rates. **Suggested change: Note that comparisons are for high discharge rates. Add comparisons for low discharge rates.**

32-55 cont'd

Page N-6. The text states that a travel time sensitivity shows that movement of water and solute through the vadose zone is largely controlled by the Hanford gravel, Hanford sand, and Ringold Gravel soil types. However, measurements at TY and U Tank Farms have show that the Cold Creek Unit is much more important. **Suggested change: Acknowledge the presence of measurements that show the importance of the Cold Creek Unit.**

32-56

Page N-6 and elsewhere. The Plio-Pleistocene unit is now know as the Cold Creek Unit. **Suggested change: make a global change so that readers are not confused.**

32-57

Page N-7. The text states that the measurements and calculations are in general agreement. However, Figure N-6 (Predicted concentrations" show less than 2 orders of magnitude drop from the peak. Yet Figure N-5 (measured gross beta) shows over 4 orders of magnitude drop. **Suggested change: Explain why calculations are so far from measurements and what are the key parameter changes that would be needed to reduce this difference (including lateral flow).**

Page N-8. The x-axis for Figure N-6 is years after some undefined time. **Suggested change: Place 0 year at the date of the start of discharges, so that direct comparison can be made to Figure N-5.**

32-58

Pages N-12 and N-13. Figure N-9 (measurements) and Figure N-10 (calculations) are plotted to different scales and orientation. **Suggested change: Figure N-9 (measurements) and Figure N-10 (calculations) should be plotted to the same scale and the same orientation to help the reader.**

Pages N-18. Figures N-15 and N-16 show that the TX Tank Farm had larger releases than T Tank Farm, even though T-106 was by far the largest tank farm leak. TX tank releases are mainly thought to be metal (i.e. uranium) waste and are relatively small. **Suggested change: Look at data and replot.**

Pages N-90 and N-91. The referenced figures start on page N-95, but the discussion ends on page N-91. **Suggested change: move the figures closer to the location where they are called out in the text.**

32-59

Pages N-104 and 105. Figures N-151 and 152 do not present sensitivity case 1**. Suggested change: Have sensitivity case 1 in the legend, but note the vales are the same as for the EIS case.**

32-60

32-51 This *Final TC & WM EIS* has been revised to provide the appropriate reference.

32-52 DOE disagrees with the commentor's suggested revision. There has not been sufficient product demonstration to support this conclusion.

32-53 As suggested in the comment, Section 7 (Simulation of Multiphase Fluid Flow and Reactive Transport at the SX Tank Farm) of the *Field Investigation Report for Waste Management Area S-SX* (CH2M HILL 2002) was reviewed. In particular, the descriptions of simulations of vadose zone conditions established by early year elevated tank temperatures for a tank leak (Section D.7.1) and for measured vadose zone concentrations (Section D.7.2) have been reviewed. DOE agrees that local moisture content, water and vapor flow, and solute transport are strongly influenced by the transient elevated temperatures. DOE also notes that the *Field Investigation Report for Waste Management Area S-SX* analysis reports that, for the tank leak simulation, "thermal effects on aggregated tracer migration are generally modest" (CH2M HILL 2002:page D-267) and that, for the measured concentration case, the time series of dissolved technetium concentrations at the Waste Management Area S-SX boundary (CH2M HILL 2002:Figure D.7.2.39) for isothermal and non-isothermal simulations are very similar in peak magnitudes and overall shape with a displacement in time on the order of a few years. Because the *TC & WM EIS* analysis is focused on larger scale and longer timeframe analysis supporting comparison of alternatives rather than investigation of local site conditions, DOE concludes that analysis based on isothermal conditions is sufficient for use in this EIS.

32-54 In response to this and similar comments, Appendices N and O have been expanded to include discussions of different modeling approaches in the context of this NEPA evaluation.

32-55 Further description and clarification have been provided to address this and other comments on the presentation of material in Appendix N.

32-56 Appendix N, Section N.3.6.1, was revised in this *Final TC & WM EIS* to clarify the importance of the Plio-Pleistocene Unit (part of the Cold Creek Formation) in the vadose zone flow and transport.

32-57 The stratigraphic column shown in Chapter 3, Figure 3–9, of this *TC & WM EIS* depicts the Cold Creek Unit relative to the Hanford and Ringold Formations and reflects the names of these and other geologic formations and member units recognized at Hanford. Chapter 3, Section 3.2.5.1.2, also presents a detailed description of each geologic unit, recognizing that the Cold Creek Unit

Commentor No. 32 (cont'd): Fred Mann

encompasses various deposits known informally as the Plio-Pleistocene Unit or pre-Missoula gravels, and by other terms.

As stated above, for purposes of developing the *TC & WM EIS* groundwater flow model, detailed hydrogeologic data were compiled in part from review of approximately 5,000 Hanford boring logs, as described in Appendix L, Section L.4, of this EIS. This review was conducted to discern textural differences between layers of mud, silt, sand, and gravel and associated differences in hydraulic characteristics for development of the geologic layers for the groundwater model flow field. In this scheme, the Plio-Pleistocene Unit was retained as a separate unit and individual layers within it and the Hanford and Ringold Formations and Cold Creek Unit were further assigned to 1 of 13 material types. The assigned names for these material types are used throughout the discussion of the vadose zone analysis presented in Appendices M and N and the groundwater transport analysis in Appendix O of this EIS.

32-58 With respect to this comment, the predicted concentrations of technetium-99 (Table N–6 from the *Draft TC & WM EIS*) have been overlaid on the observed gross beta and technetium-99 groundwater concentrations (Table N–5 from the *Draft TC & WM EIS*). The observed gross beta concentrations represent concentrations of technetium-99 and other activation products. The observed concentrations were used as a qualitative comparison to the predicted technetium-99 concentrations, indicating a sharp peak of technetium-99 between 1955 and 1960, decreasing to a concentration plateau between 1965 and 1975 and then decreasing to 3×10^4 picocuries per liter through the present.

For further clarification, Figures N–9 and N–10 comparing the observed versus the predicted concentrations of tritium from the Reduction-Oxidation (REDOX) Facility have been plotted on similar scales for comparisons.

DOE agrees with the commentor's interpretation of the results, with the exception of the assertion that a single tank drives the analysis. The inventories for past leaks from tank farms is discussed in Appendix D, Section D.1.4. The data indicate that the leak inventory from TX tank farm is greater than T tank farm, which leads to the results shown in Figures N–15 and N–16 from the *Draft TC & WM EIS*.

32-59 The callouts and placement of figures in Appendix N have been revised to address the commentor's concern.

32-60 Text has been added to the cited section to explain why data for Sensitivity Case 1 are not presented on the cited figure.

Commentor No. 33: Karen Mitzner

From: Karen [co-create@comcast.net]
Sent: Thursday, February 11, 2010 10:04 AM
To: tc&wmeis@saic.com
Subject: Hanford

Making Hanford a nuclear dump for the nation is unacceptable to me, as a Portland resident and cancer survivor, and, if the facts were known nationally, would be unacceptable across the nation. Trucking nuclear waste makes an accident a near inevitability, "dirty bombs" waiting to explode. *33-1*

Moreoever, the Hanford Nuclear Reservation is already the most contaminated site in the Western Hemisphere. Even vitrification, our best alternative to other storage options at Hanford, is not a good solution--glass is not able to endure the millennia necessary to prevent the escape of extremely toxic waste into the biosphere. *33-2*

We've had it with Hanford and nuclear power and nuclear waste dumping in this region! Clean up Hanford! *33-3*

Karen Mitzner
co-create@comcast.net
136 SE 63rd Ave
PD, OR 97215

33-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

33-2 Vitrification of radioactive waste into glass is an attractive option because it atomistically bonds the species in a solid glassy matrix. Because the radioactive constituents are bonded within the glass structure, the waste forms produced are very durable and environmentally stable over long time periods; however, they remain toxic. EPA has declared vitrification to be the best-demonstrated available treatment technology for HLW that exhibits the characteristic of toxicity for metals and corrosivity (Land-Disposal-Restriction Requirements [40 CFR 268]). The tank waste is considered to be mixed waste and must be treated to meet the applicable treatment standards. While borosilicate glass (vitrified glass) is the most durable and stable material currently known, as the commentor states, the waste in the glass would remain toxic and eventually be released.

33-3 The use of nuclear power in the United States is beyond the scope of this *TC & WM EIS*.

Commentor No. 34: Kris Gann

U.S. DEPARTMENT OF ENERGY

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Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/9/10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

Do what you originally agreed to do.
1. Clean up Hanford to 99.9% retrieval level and stop trying to get out of it.
2. Do not transport any additional radioactive material or waste. It's unconscionable to jeopardize our health and well being now and future generations by doing this.
3. Clean up and remediate the Site for all existing wastes and contamination. The Columbia River should be safe for salmon and humans.

34-1

34-2

34-3

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Kris Gann
Address/Dirección: 907 Cascade
City, State, Zip Code/Ciudad, Estado, Zona Postal: Hood River, OR 97031

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NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

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TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

34-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

34-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

34-3 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

Commentor No. 35: Elaine Johnson

U.S. DEPARTMENT OF ENERGY

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Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 02/09/10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
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I demand that DOE cleans up all 53 million gallons of buried nuclear waste to 99.9% retrieval. I am a senior but have grandchildren who love to play & fish in the Columbia. I want it to be safe for them & their children's children to enjoy the beauty & the health of the Columbia river all the way to the Pacific Ocean. *35-1*

I want you to DROP the proposal to ship radioactive waste from Jim Pachos' dump to Hanford. That is a potential disaster. Please DO NOT DO THIS to the beautiful NW!!! *35-2*

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Elaine Johnson

Address/Dirección: 1201 Cascade Ave

City, State, Zip Code/Ciudad, Estado, Zona Postal: Hood River Or. 97031

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E-mail: TC&WMEIS@saic.com

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35-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

35-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 36: Scott Johnson

U.S. DEPARTMENT OF ENERGY

Comment Form
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Thank you for your input
Gracias por su participación

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Date/Fecha: 2/9/2010

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MAKE IT MADATORY THAT DOE CLEAN UP ALL THE 53 MILLION GALLONS OF WASTE — *36-1*

DO NOT SHIP MORE RADIOACTIVE WASTE TO HANFORD. DOE CAN'T HANDEL THE ON GOING RESPONSIBILITY. — *36-2*

CLEAN UP THE MILLIONS OF GALLONS OF NUCLEAR WASTE AS IT IS LEAKING INTO THE COLUMBIA. I AM A FISHERMAN AND ARE CONCERNED ABOUT EATING THE FISH THAT I CATCH. — *36-3*

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: SCOTT JOHNSON

Address/Dirección: 1201 CASCADE AVE, HOOD RIVER, OR 97031

City, State, Zip Code/Ciudad, Estado, Zona Postal: _____

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E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

36-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all of the SST system, which would effectively remove 100 percent of the waste. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

36-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

36-3 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

Commentor No. 37: Linda Short

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: 2/10/10

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
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I have been following this concern for decades now and it's shameful that this potential dangerous situation has yet to be dealt with. Clean it up already! And NO new waste !!!

***** CONTINUE ON BACK FOR MORE SPACE *****
***** CONTINUAR AL DORSO PARA MÁS ESPACIO *****

Name/Nombre: Linda Short

Address/Dirección: 2115 Avalon Way

City, State, Zip Code/Ciudad, Estado, Zona Postal: Hood River, OR 97031

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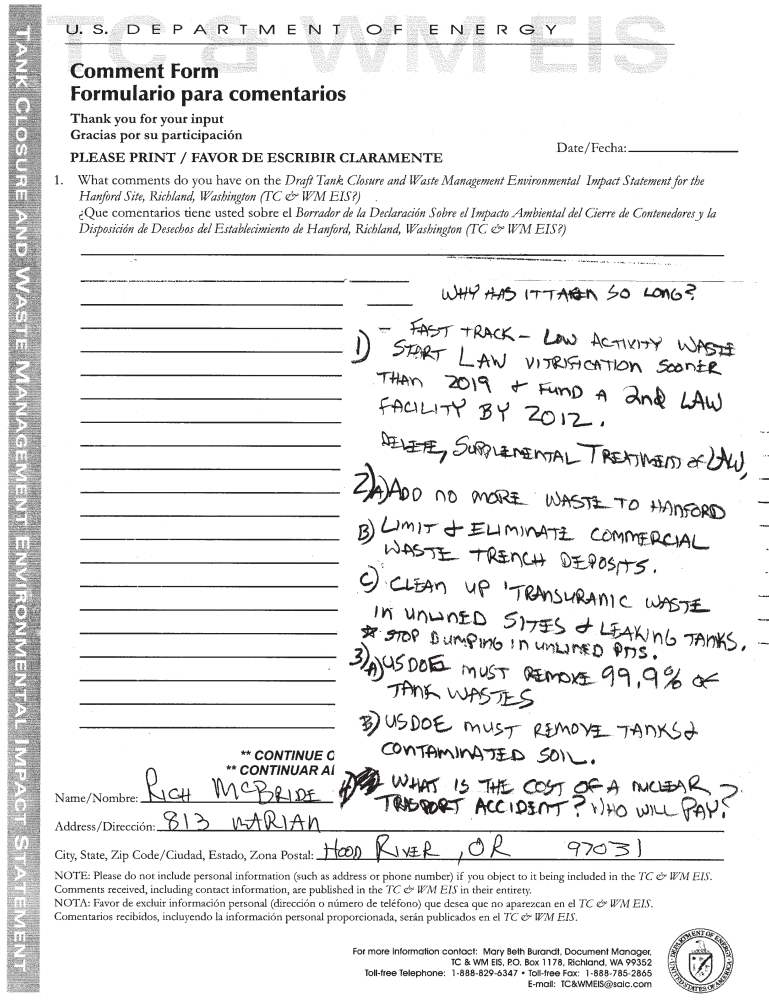
E-mail: TC&WMEIS@saic.com

37-1

37-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 38: Rich McBride



U.S. DEPARTMENT OF ENERGY

TC & WM EIS

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: _____

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

WHY HAS IT TAKEN SO LONG?

1) - FAST TRACK - LOW ACTIVITY WASTE START LAW VITRIFICATION SOONER THAN 2019 & FUND A 2nd LAW FACILITY BY 2012. — 38-1

DELETE, SUPPLEMENTAL TREATMENT of LAW,

2) A) ADD NO MORE WASTE TO HANFORD — 38-2

B) LIMIT & ELIMINATE COMMERCIAL WASTE TRENCH DEPOSITS. — 38-3

C) CLEAN UP 'TRANSURANIC WASTE IN UNLINED SITES & LEAKING TANKS, * STOP DUMPING IN UNLINED PITS. — 38-4

3) A) USDOE MUST REMOVE 99.9% OF TANK WASTES

B) USDOE MUST REMOVE TANKS & CONTAMINATED SOIL. — 38-5

** CONTINUE O
** CONTINUAR AI

4) WHAT IS THE COST OF A NUCLEAR TRANSPORT ACCIDENT? WHO WILL PAY? — 38-6

Name/Nombre: RICH MCBRIDE

Address/Dirección: 813 MARIAN

City, State, Zip Code/Ciudad, Estado, Zona Postal: HOOD RIVER, OR 97031

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E-mail: TC&WMEIS@saic.com

38-1 As discussed in the *TC & WM EIS* Summary, Chapter 1, and Chapter 2, this EIS analyzes additional waste treatment capability that includes expanding the vitrification process capability currently being constructed in the WTP or supplementing the WTP's capability with supplemental treatment technologies. Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies, including supplemental treatment waste-form performance (durability) for long-term groundwater protection.

Appendix E, Section E.1.3.3.1, discusses the DOE Technology Readiness Assessment that included Business Case No. 7 (LAW First and Bulk Vitrification with Tank Farm Pretreatment), i.e., early startup of the LAW treatment process. However, at the time of the *Draft TC & WM EIS* preparation, DOE had not made a decision on whether to support implementation of this business case. Since then, DOE has commissioned an external technical review of the system planning for alternative supplemental treatment of LAW at Hanford (Kosson et al. 2008). The report (Kosson et al. 2008) from this review concluded that, although the current schedule for completion of the WTP LAW Vitrification Facility and supporting facilities could support early treatment of LAW in 2014, such early startup would require an interim pretreatment capability and the means for disposition of secondary waste. Since 2008, DOE has been evaluating the transition of the WTP from construction to commissioning. Information on this strategy is provided in Appendix E, Section E.1.3.3.2, of this *Final TC & WM EIS*. The *2020 Vision for WTP Project Transition to Operations (2020 Vision)* (WRPS and BNI 2011) evaluates some of the elements identified in earlier DOE reports, but focuses on commissioning of the WTP project and activities essential to starting up the LAW Vitrification Facility, the Analytical Laboratory, and the balance of facilities (BOF), as well as the Pretreatment Facility and the HLW Vitrification Facility. For more information regarding the *2020 Vision*, please see Appendix E, Section E.1.3.3.2.

38-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 38 (cont'd): Rich McBride

38-3 The purpose of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites. Commercial LLW disposal is not within the scope of this EIS.

38-4 In general, the scope of this *TC & WM EIS* does not include (nor will the potential NEPA ROD) remediation of waste that has been previously disposed of, including the TRU waste that was disposed of in the low-level radioactive waste burial grounds (LLBGs), as part of the proposed actions evaluated.

Previous use of unlined trenches for disposal was a big concern to stakeholders and Washington and Oregon States; DOE heard and addressed those concerns and is using lined trenches.

38-5 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all of the SST system.

38-6 Performing a cost analysis for transportation accidents is not within the scope of this EIS. The Price-Anderson Act of 1957 (revised in 1967, 1975, and 1988 and extended by the Energy Policy Act of 2005) requires all NRC licensees and DOE contractors to enter into agreements of indemnification for personal injury and property damage due to any nuclear or radiological incident regardless of who may be liable. Section 604 of the act limits the indemnity provided by DOE for its contractors to $10 billion for each nuclear incident, including legal costs, subject to adjustment for inflation.

Commentor No. 39: Theresa North

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: 9 Feb 2010

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
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The inhabitants of the communities along the Columbia River have said again + again that we want Hanford cleaned up. We want it cleaned up — 99.99% retrieval. We want a clean closure. Take out the tanks, contaminated soil + ancillary equipment. Do not put any new waste at Hanford!! Stop wasting our time with these meetings. We have said over + over that we want Hanford taken care of.

39-1
39-2
39-3
39-4

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Theresa North

Address/Dirección: 693 Frankton

City, State, Zip Code/Ciudad, Estado, Zona Postal: Hood River, OR 97031

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For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

39-1 DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates. Although not within the scope of this EIS, the projected results of the cleanup efforts are included in the cumulative impacts analysis.

39-2 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all of the SST system, which would effectively remove 100 percent of the waste. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

39-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

39-4 DOE conducted public hearings on the *Draft TC & WM EIS* as required under DOE's NEPA regulations to give the public an opportunity to learn more about the draft EIS and provide comments on it. DOE has considered all comments received during the public comment period, including those from the hearings, in preparing this *Final TC & WM EIS*.

Commentor No. 40: Barbara Pereira

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/10/2010

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Congress, other people, think it is so safe, why do we have to worry about groundwater contamination that has been ongoing for many years? If nuclear plants are so safe why is workers' risk mentioned? What about the contamination of Columbia River? The surfers unaware – the fishermen eating the contaminated fish – the contaminated well waters – the radiation going through Oregon down wind?

Department of Energy Secretary, Mr. Shue, has a moral, moral, obligation to clean up the site – no half baked cleanup of capping but a ~~then~~ thorough cleanup. If there needs to be more spending – do it as this nuclear waste – leaking into the ground has been here too long. Mr Shue, come live at Hanford for a year or live in Oregon in Eastern Oregon. Just hope you don't get thyroid cancer.

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

Name/Nombre: Barbara Pereira

Address/Dirección: 123 SE Umatilla

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97202

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E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

40-1

40-2

40-1 As specified in Chapter 1, Section 1.1, this *TC & WM EIS* was prepared in accordance with NEPA regulations. NEPA requires that impacts on the human environment be evaluated (40 CFR 1508.14). Because radiation hazards are associated with the activities described in this EIS, the risk to workers of such hazards are evaluated. Worker health and safety, both radiological and nonradiological aspects, are managed and monitored at Hanford. Radioactive contamination from Hanford has been detected in the Columbia River. DOE monitors the river and publishes annual site environmental reports (Poston, Duncan, and Dirkes 2011) so that the public is aware of environmental impacts resulting from ongoing operations. As presented in Chapter 3, Table 3–13 of this *TC & WM EIS*, the estimated dose from liquid releases from Hanford to the maximally exposed individual (MEI) in 2010 was 0.056 millirem. The risk of a fatal cancer from this dose is about 1 in 35 million.

This EIS evaluates potential doses to receptors (i.e., different members of the public) who would be exposed through water pathways, that is, to contaminants in groundwater, surface water, or both. The groundwater receptors are a drinking-water well user; a resident farmer; an American Indian resident farmer on the site, at the site boundary, or at the Columbia River; and an American Indian hunter-gatherer along the Columbia River. The surface-water receptors include a resident farmer, and doses to the downstream population are conservatively assumed to be the same as those to this resident farmer. Impacts on these receptors are summarized in the Summary, Tables S–5, S–6, and S–7, and Chapter 2, Tables 2–9, 2–10, and 2–11.

40-2 Funding for Hanford is beyond the scope of this *TC & WM EIS*.

Commentor No. 41: Becca and Hazel LeTourneau

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

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Date/Fecha: 2/10/10

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Hanford should be completely cleaned up. All tanks should be replaced. All waste should be cleaned from soil and groundwater. No new waste should be brought to Hanford. No waste should be transported through Portland or the surrounding area. **41-1** **41-2**

No clean-up plan is safe. No storage is permanent. My 3-year old daughter is with me tonight to represent the burden on future generations. If we cannot clean up what has already spilled - we cannot process new waste. **41-3**

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Becca and Hazel LeTourneau

Address/Dirección: 301 SE 143rd Ave

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97233

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E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

41-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. This closure includes the tank system, along with the vadose zone as impacted by the tank farms (i.e., past leaks). Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*. However, as discussed in the Summary, Section S.1.3.2, and Chapter 1, Section 1.4.2, of this *TC & WM EIS*, DOE will not make decisions on groundwater remediation, including the remediation of groundwater contamination resulting from non-tank-farm areas in the 200 Areas, because that is being addressed under the CERCLA (42 U.S.C. 9601 et seq.) process. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

41-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

41-3 DOE agrees with the need to protect the health of future generations. To this end, DOE is sponsoring extensive programs to clean up waste from past practices and prevent more waste such as that in the tanks from entering the environment.

Commentor No. 41 (cont'd): Becca and Hazel LeTourneau

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 42: John Marks

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: _____

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Hanford is already overburdened. Don't make it worse
No additional nuclear waste. — 42-1

Clear up present tank leakage. Remove tanks, Decontaminate soil. Dispose of tanks. Work until you have — 42-2
certification from unquestioned outside authority! IAEA? — 42-3

Learn from your mistakes. Resolve to correct them.
You'll feel better if you do.

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: John Marks

Address/Dirección: 1400 NE 2nd Ave Apt 802

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland 97282

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Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

42-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

42-2 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or are suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks; treat and dispose of this waste; and close the SST farms by landfill closure, selective clean closure, or clean closure. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks, including remediation of the contamination in the vadose zone.

42-3 DOE must comply with certain legal requirements to undertake specific activities that are part of the proposed actions and alternatives; these requirements are identified throughout this EIS. For example, Chapter 1, Section 1.2.1, discusses Hanford regulatory compliance requirements; and the *Washington Administrative Code* (WAC) regulations DOE must meet for the proposed closure of the SSTs. Section 1.9, which describes the alternatives evaluated in this EIS, refers to the RCRA, WAC, and DOE order requirements that must be met for DOE to implement Tank Closure alternatives. The very nature of "environmental impacts analysis" requires DOE to analyze and describe in this EIS how proposed processes and technologies would operate; what results they are expected to achieve; what end products or byproducts might result; and how these measure up against the legal requirements that apply. Statutory, regulatory, Executive order, and DOE requirements are discussed in the context of each chapter and are listed in the references at the end of each chapter. However, the International Atomic Energy Agency does not have authority over Hanford.

Commentor No. 43: Kathy Krisinski

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

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Date/Fecha: 2/10/10

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I am against Federal plans to use Hanford as a National Radioactive Waste Dump and abandon existing contamination. To do so would be to abandon our future generation, wildlife and current health of the people. You can not tell me that Tritium, Uranium, ect can be stored safely without eventual leaks and wear. To have Hanford as

43-1

43-2

***** CONTINUE ON BACK FOR MORE SPACE *****
***** CONTINUAR AL DORSO PARA MÁS ESPACIO *****

Name/Nombre: Kathy Krisinski

Address/Dirección: 11745 SE Cora St Portland, OR 97266

City, State, Zip Code/Ciudad, Estado, Zona Postal: _____

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E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

43-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

43-2 Decisions regarding the long-term storage of mercury are outside the scope of this *TC & WM EIS*. DOE evaluated the adequacy of 7 potential sites for the storage of elemental mercury in the *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement* (DOE 2011b); details of how DOE established the alternatives sites to be analyzed are presented in Chapter 1, Section 1.5.1, of that document. DOE further identifies in that EIS the Waste Control Specialists site near Andrews, Texas, as the Preferred Alternative for conducting the proposed mercury management and storage activities. DOE has not made any decision with regard to the *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement*.

Commentor No. 43 (cont'd): Kathy Krisinski

a "Candidate" site for long term mercury storage is ludicrous. With risks of impacts on developing fetus, impaired motor and cognitive skills. The impact on our rivers and oceans and drinking water with these contaminants leaking in to our water is a crime not a solution.

43-2 cont'd

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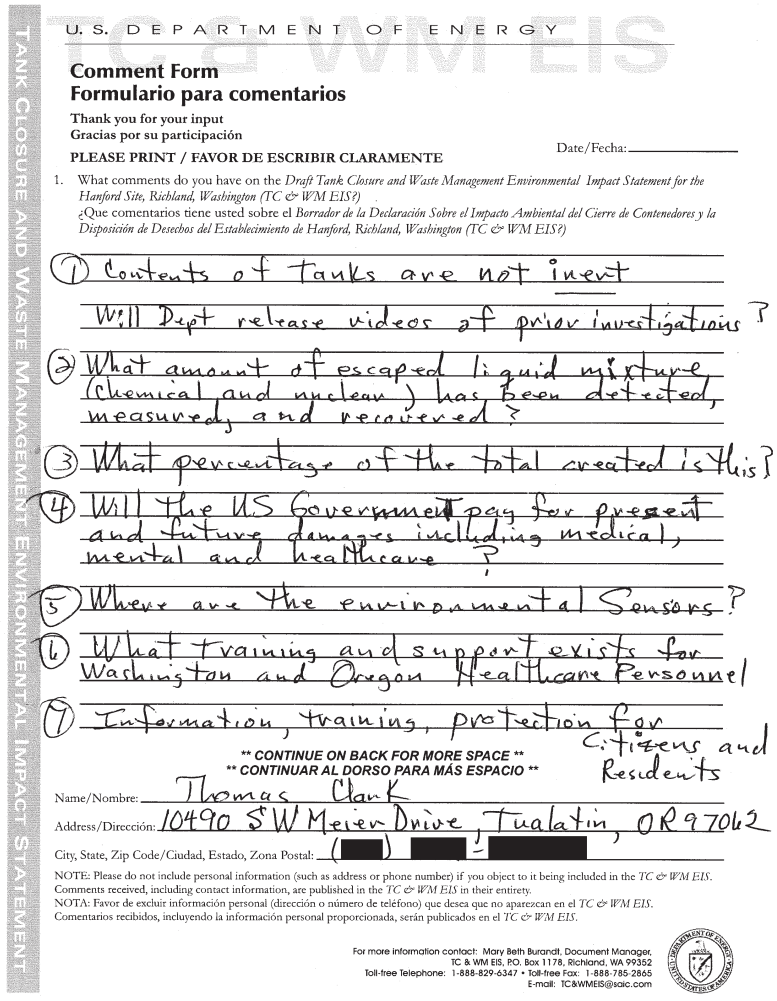
Commentor No. 44: Thomas Clark



TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

TC & WM EIS

U.S. DEPARTMENT OF ENERGY

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Gracias por su participación

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(1) Contents of tanks are not inert — 44-1

Will Dept release videos of prior investigations? — 44-2

(2) What amount of escaped liquid mixture (chemical and nuclear) has been detected, measured, and recovered? — 44-3

(3) What percentage of the total created is this?

(4) Will the US Government pay for present and future damages including medical, mental and healthcare? — 44-4

(5) Where are the environmental Sensors? — 44-5

(6) What training and support exists for Washington and Oregon Healthcare Personnel

(7) Information, training, protection for Citizens and Residents — 44-6

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Thomas Clark

Address/Dirección: 10490 SW Meier Drive, Tualatin, OR 97062

City, State, Zip Code/Ciudad, Estado, Zona Postal: ([redacted]) [redacted] - [redacted]

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E-mail: TC&WMEIS@saic.com

44-1 DOE agrees the tanks are not inert.

44-2 DOE believes the commentor is referring to videos of tank retrievals or tank inspections related to the SSTs. These videos are posted on the Hanford website (http://www.hanford.gov, in the "Video Library" section). Videos of older tank inspections that are no longer on the website can be requested from the ORP Office of Communication by phone at 509-372-8656.

44-3 The commentor is referred to Appendix D, Section D.1, as well as Appendix S. These appendices and their accompanying tables provide the best-available estimates of the liquid waste volumes and constituents that have been released to the environment at Hanford. Calculating a percentage of liquid waste that has been released to the environment from the volume of liquid waste generated is not possible because many of the liquid waste streams were either concentrated or further treated prior to release.

44-4 The role of the U.S. Government in paying for present and future health care issues is not within the scope of this EIS. This *TC & WM EIS* addresses proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites.

44-5 Regarding the location of environmental sensors, DOE surmises that the commentor is concerned about measures and equipment such as ambient air quality monitors, groundwater monitoring wells, and similar collection devices to detect contaminants that could impact human health and the environment. DOE performs environmental monitoring and surveillance for radioactive and nonradioactive constituents in air and liquid effluent emissions from Hanford facilities and for potentially affected environmental media on Hanford and in offsite locations for analysis and comparison with regulatory standards. Media surveyed on a regular basis include ambient air, soils, sediments, surface water, drinking water, and groundwater. DOE also monitors vegetation, fish, and wildlife for Hanford-produced contaminants. Sampling locations, numbers, and distribution and their analysis results are detailed in publicly available documents, such as the annual Hanford Site environmental report (Poston, Duncan, and Dirkes 2011). Chapter 3 of this *TC & WM EIS* summarizes the results of monitoring and surveillance activities relevant to selected environmental resources.

Commentor No. 44 (cont'd): Thomas Clark

44-6 DOE uses DOE Order 151.1C, *Comprehensive Emergency Management System*, as a basis to establish a comprehensive emergency management program that provides detailed, hazard-specific planning and preparedness measures to minimize the health impacts of accidents involving loss of control over radioactive material or toxic chemicals, as discussed in this *TC & WM EIS*, in Chapter 3, Sections 3.2.10.5 and 3.3.10.5, emergency preparedness at Hanford and INL, respectively. DOE provides technical assistance to other Federal agencies and to state and local governments. Hanford contractors are responsible for maintaining emergency plans and response procedures for all facilities, operations, and activities under their jurisdiction and for implementing those plans and procedures during emergencies. Plans and procedures are reviewed and approved by DOE in accordance with DOE Order 151.1C. The DOE, contractor, and state and local government plans are fully coordinated and integrated. The Transportation Emergency Preparedness Program was established by DOE to ensure its operating contractors and state, tribal, and local emergency responders are prepared to respond promptly, efficiently, and effectively to accidents involving DOE shipments of radioactive material. This program is a component of the overall emergency management system established by DOE Order 151.1C.

Commentor No. 45: Richard Piland

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: 2-10-10

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

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1. HANFORD MUST BE CLEANED UP! CONTAMINATING THE COLUMBIA RIVER FOR THOUSANDS OF YEARS IS NOT ACCEPTABLE. HOW ARROGANT CAN WE BE TO CONTEMPLATE DOING THAT?

2. NO NUCLEAR WASTE TO BE TRANSPORTED TO AND STORED IN THE NORTHWEST.

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

Name/Nombre: RICHARD PILAND

Address/Dirección: 10465 SW MILLER CT.

City, State, Zip Code/Ciudad, Estado, Zona Postal: TUALATIN, OR 97062

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TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

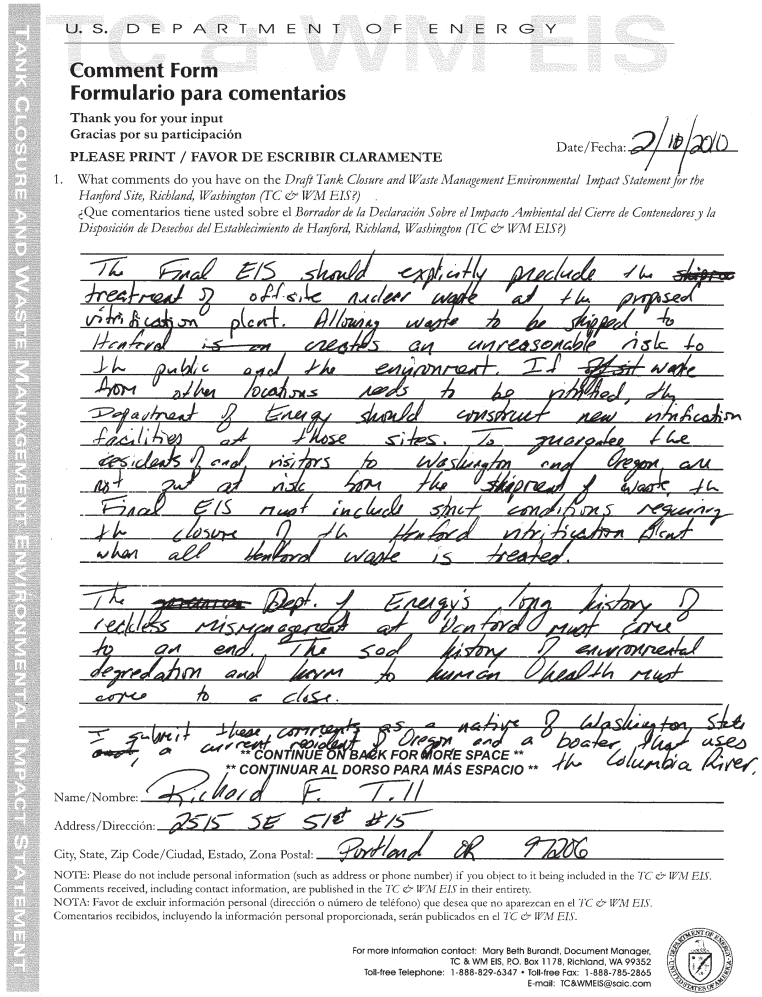
45-1

45-2

45-1 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

45-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 46: Richard F. Till



TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

TC & WM EIS

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/18/2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

The Final EIS should explicitly preclude the ~~shipment~~ treatment of offsite nuclear waste at the proposed vitrification plant. Allowing waste to be shipped to Hanford is ~~an~~ creates an unreasonable risk to the public and the environment. If ~~offsite~~ waste from other locations needs to be processed, the Department of Energy should construct new vitrification facilities at those sites. To guarantee the residents of and visitors to Washington and Oregon are not put at risk from the ~~shipment~~ of waste, the Final EIS must include strict conditions requiring the closure of the Hanford vitrification plant when all Hanford waste is treated.

The ~~nuclear~~ Dept. of Energy's long history of reckless mismanagement at Hanford must come to an end. The sad history of environmental degredation and harm to human health must come to a close.

I submit these comments as a native of Washington State, a current resident of Oregon and a boater that uses the Columbia River.

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Richard F. Till

Address/Dirección: 2515 SE 51st #15

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland OR 97206

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46-1 46-2 46-3 46-4 46-5

46-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

Although waste from other DOE sites may be packaged (including solidification) at Hanford for shipment elsewhere, offsite waste will not be vitrified at Hanford. This *TC & WM EIS* analyzes the disposal of offsite LLW and MLLW waste from other DOE facilities, but the waste would be treated at the generating DOE site prior to shipment to Hanford for disposal.

46-2 See response to comment 46-1 regarding the transport and disposal of offsite waste.

46-3 See response to comment 46-1 regarding the transport and disposal of offsite waste.

46-4 The WTP is currently under construction in the 200-East Area of Hanford. As such, construction (and subsequent operations and deactivation) of the WTP was analyzed under each Tank Closure alternative to establish a common reference point for use in comparing alternatives. However, closure of the WTP is not part of the proposed actions in this *TC & WM EIS* because the WTP is needed to complete waste treatment activities. See Chapter 1, Section 1.4.2, Decisions Not to be Made, for more information. Closure of the WTP will be addressed at a later date and will be subject to appropriate future NEPA review.

46-5 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called

Commentor No. 46 (cont'd): Richard F. Till

milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 47: David Moen

U.S. DEPARTMENT OF ENERGY

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Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: Feb. 10, 2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

I consider radioactive waste the biggest environmental terrorist threat to our homeland security we have ever faced. In light of this I expect a permanent sollution to cleaning up Hanford quickly + 100% thouroughly. This means I expect: *47-1*

- Recind the prefered alternative to turn Hanford into a national radioactive waste dump; Bringing more nuclear waste to Hanford is not acceptable under any conditions! *47-2*
- clean up all of the waste that currently exists!!! (on site) It is legally, morally, + ethically reprehensible to do anything less. *47-3*
- Honor the state + federal trust responsibilities to the tribal nations by consulting with them + doing what they recomend is the responsible Sollution in their homelands. *47-4*
- clean up the ground water + seal the "leaker" tanks, no matter what. *47-3 cont'd*

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

Name/Nombre: Mr. David Moen

Address/Dirección: 16751 S. McCubbin Rd.

City, State, Zip Code/Ciudad, Estado, Zona Postal: Oregon City, OR 97045

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47-1 Comment noted.

47-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

47-3 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

47-4 DOE actively engages in government-to-government consultations with tribes in the vicinity of Hanford. These consultations offer the opportunity for tribes to engage in meaningful dialogue in advance of DOE decisionmaking.

Commentor No. 48: Anonymous

U.S. DEPARTMENT OF ENERGY

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Formulario para comentarios

Thank you for your input
Gracias por su participación

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Date/Fecha: 2/10/10

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¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

Anything to decrease leakage into the Columbia River → keep working hard to minimize waste → I wish I knew the answers → your work is so astronomical to the 7th generation. The responsibility is so huge. Actions = everything → What can I do to help? We are all so sad. This is such a condition to tackle. Keep the faith & pray – I'm praying for your work & straight mind in this problem. May God heal this tragedy. *48-1*

Moving more waste to Hanford doesn't make sense. *48-2*

Autism is on the rise. 10 years ago 1 out of 10,000 kids had autism – now 1 out of 150 have autism. I believe immunizations (some) & toxic waste are a big reason for this increase.

Keep the faith!

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

Name/Nombre: _____

Address/Dirección: _____

City, State, Zip Code/Ciudad, Estado, Zona Postal: _____

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E-mail: TC&WMEIS@saic.com

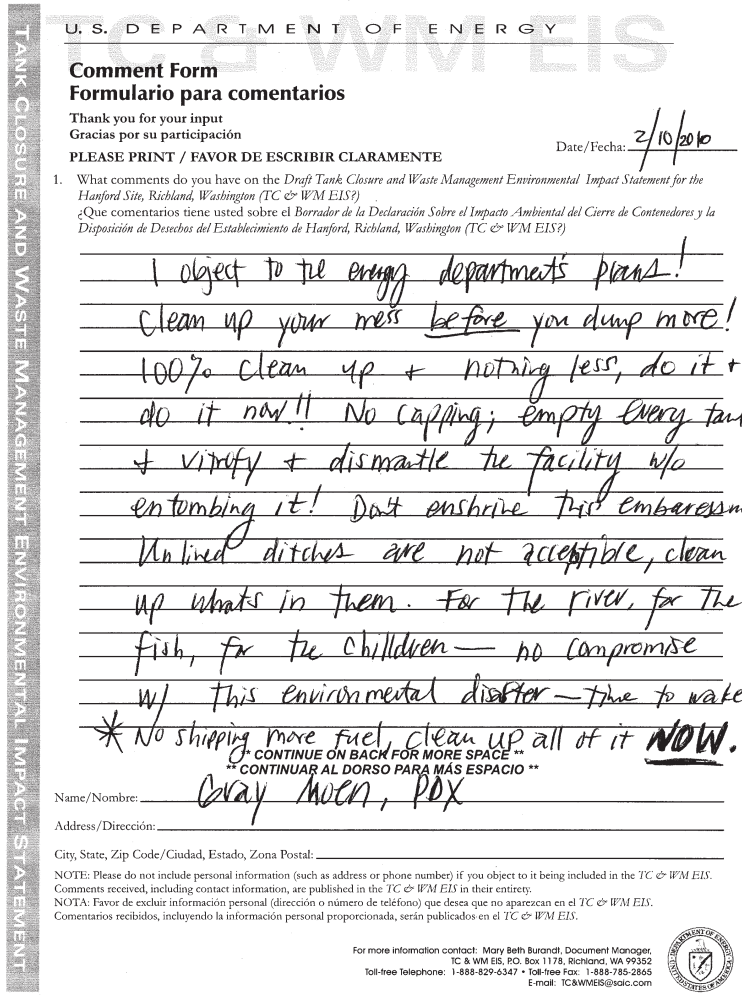
48-1 Since 2004, DOE has buried all LLW in lined trenches. DOE continues to have strict limits for the amount of waste Hanford can accept, and ensures that disposal activities are protective of the environment and meet regulatory requirements. See Chapter 1, Section 1.4, for more on DOE's commitment to using lined trenches.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

At all DOE sites, including Hanford, the Site Pollution Prevention Program is a comprehensive, continual effort to reduce the quantity and toxicity of hazardous, radioactive, mixed, and sanitary wastes; and prevent or minimize pollutant releases to all environmental media from all operations and site cleanup activities. The Site Pollution Prevention Program reflects Federal and DOE policies to reduce, reuse, and/or recycle wastes as asserted by the Pollution Prevention Act of 1990. See Chapter 3, Sections 3.2.12.2 (Hanford) and 3.3.12.2 (INL), and Chapter 4, Section 4.1, for more details of waste minimization activities.

48-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 49: Gray Moen



TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF ENERGY

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Date/Fecha: 2/10/2010

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I object to the energy department's plans!
Clean up your mess before you dump more! 49-1

100% clean up + nothing less, do it +
do it now!!! No capping; empty every tank
+ vitrify + dismantle the facility w/o
entombing it! Don't enshrine this embarassment! 49-2
Unlined ditches are not acceptible, clean
up whats in them. For the river, for the
fish, for the chilldren — no compromise
w/ this environmental disaster — time to wake up!
* No shipping more fuel, clean up all of it NOW. 49-3

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Gray Moen, POX

Address/Dirección:

City, State, Zip Code/Ciudad, Estado, Zona Postal:

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E-mail: TC&WMEIS@saic.com

49-1 DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates. Although such cleanup activities are not within the scope of this EIS, DOE included remediation activities in the present cumulative impacts analysis. These activities encompass existing contamination from past tank leaks and past waste management practices. DOE also recognizes stakeholders' concerns about cleaning up the site before bringing more waste from other DOE sites for disposal. To this end, in a *Federal Register* notice published on December 18, 2009 (74 FR 67189), DOE modified its Preferred Alternative for waste management and extended the duration of the moratorium until the WTP is operational. DOE also included GTCC waste as part of that moratorium. DOE has not changed its Preferred Alternative in this final EIS concerning this extended moratorium. DOE's inclusion of the moratorium in its ROD following issuance of this final EIS would result in its enforceability.

49-2 The clean closure alternatives considered for the SST system are represented by Tank Closure Alternatives 6A and 6B, Base and Option Cases. For both Tank Closure Alternatives 6A and 6B, Base Cases, the assumption is that the SST system would be cleaned to levels that would allow unrestricted use, which would involve removal of the tanks, ancillary equipment, and soils beneath the tanks (contaminated as a result of past leaks) down to the water table. The two Option Cases represent this type of clean closure along with removal of soils beneath the tank farms (contaminated as a result of infiltration from the contiguous cribs and trenches [ditches]). The analysis shows that removal of the contaminants from the vadose zone does not capture those contaminants that may have already reached the groundwater table due to past practices (i.e., past leaks and contiguous cribs and trenches [ditches]).

Since 2004, DOE has buried all LLW in lined trenches (see Appendix E, Section E.3.3, for the evolution of past disposal practices). DOE continues to have strict limits for the amount of waste Hanford can accept and ensures that disposal activities are protective of the environment and meet regulatory requirements. Previous use of unlined trenches for disposal was a big concern to stakeholders and Washington and Oregon States; DOE heard and addressed those concerns and is using lined trenches.

Commentor No. 49 (cont'd): Gray Moen

The remediation of burial grounds is not within the scope of this EIS. However, Appendix S includes DOE's inventory estimates for the burial grounds and Appendix U provides supporting information on the long-term cumulative impact analyses that includes the burial ground inventories.

49-3 DOE assumes that the commentor is referring to SNF when referring to the shipment of "fuel" to Hanford.

Regarding the safe disposal of waste generated from nuclear energy production, the current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

Commentor No. 50: Susan O. Moen

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

Date/Fecha: 2-10-2010

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- Hanford must be cleaned up entirely, soil, ground water and all.
- No new nuclear waste should be allowed to come to Hanford.
- "Decommission" not "Entombment."
- This is expensive, but it is the true cost of nuclear production + should be entered into the equasion from the begining... lets pay what it takes to do the job right: 99.9% clean up.

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

Name/Nombre: Susan O. Moen, Portland

Address/Dirección: [redacted]

City, State, Zip Code/Ciudad, Estado, Zona Postal:

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E-mail: TC&WMEIS@saic.com

50-1
50-2
50-3
50-1 cont'd

50-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. This closure includes the tank system, along with the vadose zone as impacted by the tank farms (i.e., past leaks). Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

However, as discussed in the Summary, Section S.1.3.2, and Chapter 1, Section 1.4.2, of this *TC & WM EIS*, DOE will not make decisions on groundwater remediation, including the remediation of groundwater contamination resulting from non-tank-farm areas in the 200 Areas, because that is being addressed under the CERCLA (42 U.S.C. 9601 et seq.) process. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

50-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

50-3 Three alternatives for decommissioning FFTF are presented in this *TC & WM EIS*. These alternatives are No Action, Entombment, and Removal. DOE has selected FFTF Decommissioning Alternative 2: Entombment, as its Preferred Alternative. This alternative would remove all above-grade structures, including the reactor building. Below-grade structures, the reactor vessel, piping, and other components would remain in place and be filled with grout to immobilize the remaining and hazardous constituents. Waste generated from these activities would be disposed of in an IDF, and a modified RCRA

Commentor No. 50 (cont'd): Susan O. Moen

Subtitle C barrier would be constructed over the filled area. The RH-SCs would be processed at INL, but bulk sodium inventories would be processed at Hanford (see Chapter 2, Section 2.12.2).

Commentor No. 51: Allen Evans

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/10/10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
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Hanford was selected as a location for production of radioactive materials for reasons that overwhelmed concerns ~~for~~ regarding the geology and groundwater characteristics of the area. Wartime hysteria required a quick decision be made. Hanford was remote - facilitating security and secrecy. There was a low population density, abundant water from the Columbia River, and abundant electricity from newly completed dams on that river. Waste management was a secondary concern. The result is the set of problems with contamination we are dealing with now. These demonstrate that Hanford is an inappropriate place for the storage of nuclear waste, especially long term. No more offsite waste should be shipped there.

The best solution would be to stop production of nuclear materials to begin with. Thank you.

51-1

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Allen Evans

Address/Dirección: 3926 S.E. Nehalem St

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97202

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TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

51-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections discuss the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

The production of nuclear materials is not within the scope of this *TC & WM EIS*. This EIS addresses proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites.

Commentor No. 52: Lynn Ford

U.S. DEPARTMENT OF ENERGY

Comment Form
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Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/10/200

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1. DO NOT ADD ANY MORE WASTE OF ANY KIND TO HANFORD. USE STIMULUS MONEY TO TREAT IT ALL "IN SITU." THAT WOULD GET SUPPORT FROM MANY CONGRESSIONAL REPS. — 52-1

2. START UP L.A.W. VITRIFICATION PART OF WTP by 2019. START FUNDING 2ND L.A.W. IN 2012 TO have it start operations by 2022 — 52-2

3. Follow WASH. State standard for FFTF waste removal + site restoration — 52-3

4. Perform true "clean closure" for single shell tanks Follow WASH. State Law. Remove 99.9% of tank wastes — 52-4

Get more funding for clean up from stimulus money; provide employment doing something useful. — 52-5

Also, give Iranian officials a tour. Maybe they won't like nukes after that — 52-2 cont'd

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: LYNN FORD

Address/Dirección: 410 N. Blandena St

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97217

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
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For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

52-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

52-2 The use of stimulus funds to treat waste and clean up Hanford is beyond the scope of this *TC & WM EIS*.

52-3 This EIS analyzed supplemental LAW treatment capability by building new treatment facilities that are either part of (expanded LAW capacity) or separate (bulk vitrification, steam reforming, or cast stone) from the WTP. As discussed in Chapter 2, Section 2.12, DOE does not have a preferred alternative regarding supplemental treatment for LAW. DOE believes it is beneficial to study further the potential cost, safety, and environmental performance of supplemental treatment technologies. DOE is committed to meeting its obligations under the TPA regarding supplemental treatment for LAW.

52-4 DOE must comply with certain legal requirements to undertake specific activities that are part of the proposed actions and alternatives; these requirements are identified throughout this EIS. For example, Chapter 1, Section 1.2.1, discusses Hanford regulatory compliance requirements; Section 1.2.7 discusses the WAC regulations DOE must meet for the proposed closure of the SSTs. Section 1.9, which describes the alternatives evaluated in this EIS, refers to the RCRA, WAC, and DOE order requirements that must be met for DOE to implement Tank Closure and FFTF Decommissioning alternatives. The very nature of "environmental impacts analysis" requires DOE to analyze and describe in this EIS how proposed processes and technologies would operate; what results they are expected to achieve; what end products or byproducts might result; and how these measure up against the legal requirements that apply. Statutory, regulatory, Executive order, and DOE requirements are discussed in the context of each chapter and are listed in the references at the end of each chapter.

52-5 Comment noted.

Commentor No. 53: Lang Davison

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2-10-10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

we want and demand:

(1) Closure of 99.9 % of the waste already at Hanford
Clean
- Empty all ~~tanks~~ tanks, all 53 million gallons
Immediate
- Clean the soil beneath tanks
- Remove the tanks

(2) No new GTCC waste into Hanford. No more Radioactive waste from other sites into Hanford, Not a national waste dump. Drop the proposals

(3) Clean up what's already leaking into the groundwater through the soil — the millions of gallons of nuclear waste, [and/OR failing to clean up what's already there]
Adding more waste is legally, morally, and ethically unacceptable!

53-1

53-2

53-3

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Lang Davison

Address/Dirección: 1739 SE Lexington St.

City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97202

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E-mail: TC&WMEIS@saic.com

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

53-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*. DOE is implementing an extensive, ongoing cleanup program at Hanford as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

53-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Regarding the commentor's concern about the inclusion of GTCC LLW in this *TC & WM EIS*, DOE has included information from the *Draft GTCC EIS* in the *Final TC & WM EIS* cumulative impacts analysis. For a more comprehensive discussion on GTCC LLW, see Section 2.12 of this CRD.

53-3 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

Commentor No. 53 (cont'd): Lang Davison

See response to comment 53-2 for a discussion on the transport and disposal of offsite waste.

Commentor No. 54: Martin Mijal

U. S. DEPARTMENT OF ENERGY

TC & WM EIS

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2.10.10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

Nuclear waste affects our descendents & other life-forms for 100,000 plus years. This is poison. IT KILLS. Cancer is an ugly way to die. This is not a trivial decision. 54-1

This problem should never have occurred. Genius scientists needed use of intelligence & a huge budget to make this poison for weapons of mass destruction. Lack of long-term planning now gives us extremely serious hazards to current workers to de-contaminate this & also the 1,000,000 gallons leaking to our Glorious Columbia River. 54-2 54-3

The theory of Capitalism is that if incompetence happens — the Boss is FIRED. D.O.E. is a FAILURE! You all should be fired!

Clean up the poison from our weapons of mass destruction. I want: 1) USDOE must remove 99.9% of tank wastes. 54-4

2) USDOE must remove tanks. Do "clean closure." Remediate the soil & clean it. Leaving the bottom 1% of poison is the leaviest, hardest to remove AND the MOST POISONOUS! This is essential to remove 99.9 % ! 54-5

3) Remove FFTF & restore the site. Treat the FFTF waste at Hanford. 54-6

4) START up the LAW VITRIFICATION portion of WTP PRIOR to 2019. Fund & Complete a second LAW facility in 2012 →

Continued →

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: MARTIN MIJAL

Address/Dirección: 4527 NE SUMNER ST.

City, State, Zip Code/Ciudad, Estado, Zona Postal: Pdx OR 97218

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E-mail: TC&WMEIS@saic.com

54-1 This EIS addresses the environmental impacts of retrieval, treatment, and disposal of tank waste and final closure of the SST system. It also evaluates the impacts of FFTF decommissioning, including management of waste generated by the decommissioning process. Finally, this *TC & WM EIS* evaluates the potential environmental impacts of ongoing solid-waste management operations at Hanford, as well as the proposed disposal of Hanford LLW and MLLW and a limited volume of offsite LLW and MLLW.

54-2 The actions proposed in this *TC & WM EIS* include the retrieval and treatment of highly radioactive waste from defense plutonium production that was placed into underground SSTs for storage. The pressing need for a strong national defense capability during World War II led to the development of Hanford to produce plutonium for weapons production. In the ensuing decades, Hanford continued to be part of DOE's Defense Complex as well as being engaged in efforts to develop nuclear power for peaceful purposes. During these early decades, the nation did not have the environmental awareness, laws, and regulations that exist today. Nevertheless, it was recognized that HLW from plutonium production should be managed as safely as possible, and DOE's predecessor agencies constructed large facilities, including the underground tanks, to manage the waste produced as a result of Hanford's national defense mission. In implementing its programs, including the cleanup activities evaluated in this EIS, ensuring worker safety is a matter of DOE policy and primary concern. DOE works and will continue work to minimize risks to workers through site procedures and job control plans aimed at maintaining radiation doses ALARA. Worker doses will be controlled by techniques such as planning work to reduce time of exposure, increasing the number of workers, using shielding, and employing remote operations.

54-3 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

54-4 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include

Commentor No. 54 (cont'd): Martin Mijal

So it will operate by 2022.

@ NO NO more waste - poison - cancer - causes added to Hanford.

President Bush signed an executive order putting DOE in charge of the cleanup. President OBAMA could review the failure of ~~DOE~~ & sign an executive order that EPA is in charge MAYbe then some energy, funding, genius, passion, & creativity could be used to CLEAN UP HANFORD — 99.99% !

54-6 cont'd

54-7

54-8

54-5 Comment noted.

54-6 As discussed in the *TC & WM EIS* Summary, Chapter 1, and Chapter 2, this EIS analyzes additional waste treatment capability that includes expanding the vitrification process capability currently being constructed in the WTP or supplementing the WTP's capability with supplemental treatment technologies. Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies, including supplemental treatment waste-form performance (durability) for long-term groundwater protection.

Appendix E, Section E.1.3.3.1, discusses the DOE Technology Readiness Assessment that included Business Case No. 7 (LAW First and Bulk Vitrification with Tank Farm Pretreatment), i.e., early startup of the LAW treatment process. However, at the time of the *Draft TC & WM EIS* preparation, DOE had not made a decision on whether to support implementation of this business case. Since then, DOE has commissioned an external technical review of the system planning for alternative supplemental treatment of LAW at Hanford (Kosson et al. 2008). The report (Kosson et al. 2008) from this review concluded that, although the current schedule for completion of the WTP LAW Vitrification Facility and supporting facilities could support early treatment of LAW in 2014, such early startup would require an interim pretreatment capability and the means for disposition of secondary waste. Since 2008, DOE has been evaluating the transition of the WTP from construction to commissioning. Information on this strategy is provided in Appendix E, Section E.1.3.3.2, of this *Final TC & WM EIS*. The *2020 Vision* (WRPS and BNI 2011) evaluates some of the elements identified in earlier DOE reports, but focuses on commissioning of the WTP project and activities essential to starting up the LAW Vitrification Facility, the Analytical Laboratory, and the BOF, as well as the Pretreatment Facility and

Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

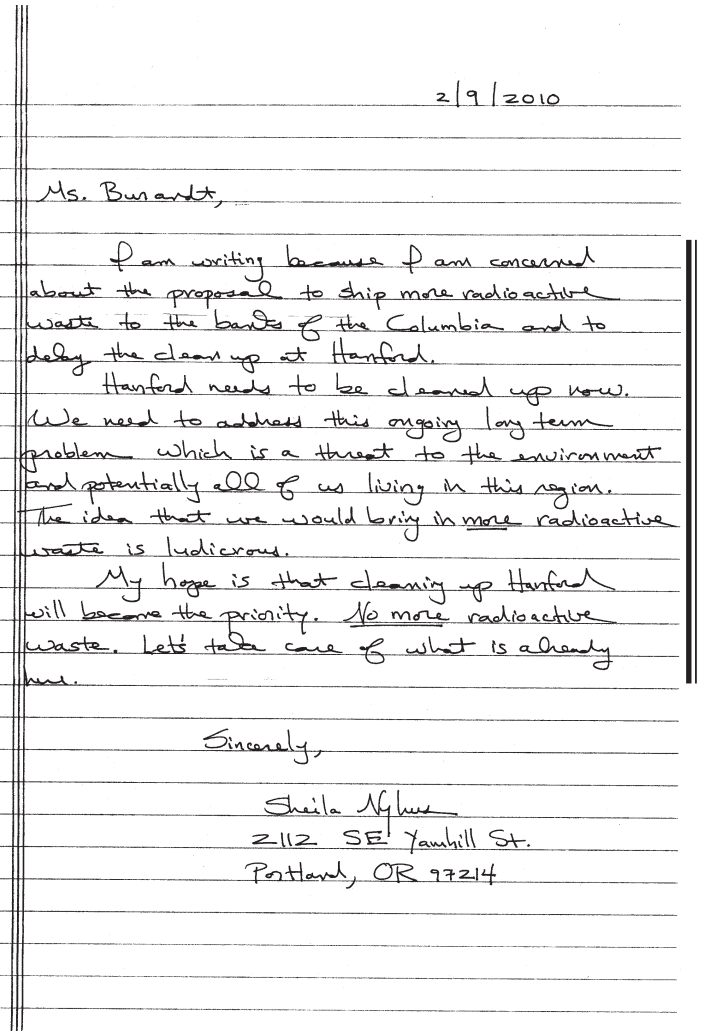
Commentor No. 54 (cont'd): Martin Mijal

the HLW Vitrification Facility. For more information regarding the *2020 Vision*, please see Appendix E, Section E.1.3.3.2.

54-7 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

54-8 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 55: Sheila Nyhus



2/9/2010

Ms. Burandt,

I am writing because I am concerned about the proposal to ship more radioactive waste to the banks of the Columbia and to delay the clean up at Hanford.

Hanford needs to be cleaned up now. We need to address this ongoing long term problem which is a threat to the environment and potentially all of us living in this region. The idea that we would bring in more radioactive waste is ludicrous.

My hope is that cleaning up Hanford will become the priority. No more radioactive waste. Let's take care of what is already here.

Sincerely,

Sheila Nyhus
2112 SE Yamhill St.
Portland, OR 97214

55-1

55-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 56: Bob Severson, Mayor, City of Hermiston, Oregon

Administrative Offices
180 N.E. 2nd Street
Hermiston, OR 97838-1860
Phone (541) 567-5521 • Fax (541) 567-5530
E-mail: bseverson@hermiston.or.us

Mary Beth Burandt
DOE Draft TC&WM EIS Comments
Office of River Protection
Richland, WA 99685

Dear Ms. Burandt:

The City of Hermiston is extremely concerned with potential plans by the US Department of Energy to allow the Hanford Nuclear Reservation near Richland, Washington as a permanent nuclear waste disposal site for waste from across the United States.

As a community that lies down stream from the Hanford site, as a community that relies on water withdrawals from the Columbia River system for domestic use in our municipal water system, as a region that is driven economically by agricultural production of irrigated food crops with water drawn from the Columbia River and with Oregon's plan to pump Columbia River water during the winter months into local aquifiers we are strongly opposed to plans for storage of off site waste to this site and the further threat of groundwater contamination.

Because the EIS shows "persistent contamination in Hanford's groundwater for thousands of years"and the likelihood that much of this contaminated groundwater would likely reach the Columbia River, the long term impacts on the groundwater will be significant and we ask that this plan be stopped.

Our citizens have lived under the shadow of this facility for many years and just as they are beginning to hope that significant advances may be made in mitigating this contamination now they want to store more waste and threaten further environmental liabilities to an already endangered site. This is not an acceptable solution or alternative. Our citizens expected clean-up, not new hazardous disposals.

Please oppose any plan to use Hanford as a national depository for nuclear waste.

Sincerely,

Bob Severson
Mayor

cc: Hermiston City Council
Ed Brookshier, City Manager.

H:\Mayor letter USDOE Hanford

RECEIVED
FEB 09 2010
DOE-ORP/ORPCC

56-1

56-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections discuss the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

Commentor No. 57: Jeffrey Weih

From: Jeffrey Weih [jweih@yahoo.com]
Sent: Thursday, February 11, 2010 4:18 PM
To: tc&wmeis@saic.com
Subject: hanford mess

Clean up Hanford completely! *57-1*

No more acceptance of waste until this is done! *57-2*

57-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

57-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 58: Keeley Harding

From: Keeley Harding [createbeautyexposetruth@yahoo.com]
Sent: Thursday, February 11, 2010 5:56 PM
To: tc&wmeis@saic.com
Subject: NONE of the public wants more waste at Hanford especially since it's own has not been 100% cleaned up!

Our answers will never change for as long as Hanford-people keep coming, going and asking. If I asked everyone I know and everyone they know and on and on, no one would say, "I don't want Hanford cleaned up because it costs too much money. Our health, salmon and groundwater are not worth it. I would love to be exposed to highly toxic waste alongside me on the freeway. I think the exponentially increased cancer and other health risks would be an exciting challenge, especially for my children! I think the whole country's nuclear waste should be stored on the banks of a major river near a volcano."

Most people I hear who say they've been coming to Hanford hearings for 20 years are in their 50s or 60s. Not me, I'm 23. I've been attending with my parents and brother in Hood River since I was a little kid. I have vivid images in my memory of the variety of hearings over the years, accompanied by the DeBrulers and the many other heroes who always show up. Meanwhile the USDOE panelists come and go. Buses of Richlanders used to come crash, but I think they gave up on convincing Hood Riverites that radiation is good for health.

I, we all, demand that USDOE thoroughly clean up all 53 million gallons of buried nuclear waste as well as the millions of gallons that have already leaked and begun reaching the Columbia River. We must always clean up first, as a rule. And of course disassemble the FFTF. Nuclear energy is not the future. It has been a horrible disaster and should never be pursued anywhere again. *58-1* *58-2*

I, we all, demand that USDOE forget once and for all the proposal to ship radioactive waste from across the country to Hanford along I-5, I-84 and all the other interstates this proposal would effect. USDOE's own analysis admits that shipping waste would lead to as many as 816 fatal radiation-induced cancers in adults from the trucks en route, barring accidents or terrorist attacks. Further, children are 3 to 10 times more susceptible to cancer. And the USDOE analysis must include the effects on threatened and endangered species. *58-3* *58-4* *58-5*

Our government DOES have enough money to clean up Hanford. Money just needs to be reallocated. It doesn't matter the cost, Hanford must be cleaned up, before everyone who has any connection to the perceived success of nuclear power is dead. We cannot leave this mess for our children when they will be so far beyond the idea of nuclear power... onto actual safe, renewable energies. *58-6*

58-1 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or are suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on the Columbia River.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

58-2 Comment noted.

58-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

58-4 The value of 816 LCFs is from the results provided in the *GNEP PEIS* (DOE 2008b). This value represents the maximum impacts associated with 50 years of transportation activities supporting the operations of all existing U.S. commercial light-water reactors if they all were replaced with high-temperature, gas-cooled reactors. The *GNEP PEIS* was canceled by DOE on June 29, 2009 (74 FR 31017). As shown in the Summary of this *TC & WM EIS*, Section S.5.3; Chapter 2, Section 2.8.3.10; and Chapter 4, Section 4.3.12, it is unlikely that the estimated total public radiation exposures from transporting radioactive waste to Hanford for disposal would result in any additional LCFs.

There is no existing guidance that recommends dose coefficients for children's exposure to external radiation. DOE acknowledges that children have an elevated sensitivity to radiation exposure. The most recent guidance for use of exposure-to-dose coefficients related to external exposure (ionizing radiation) is used in the analysis. This guidance can be found in Federal Guidance Report No. 12, *External Exposure to Radionuclides in Air, Water, and Soil* (Eckerman and Ryman 1993). This guidance provides estimates for an adult,

but not for children. For internal exposure to radiation through inhalation and ingestion, EPA currently recommends that assessors calculate chronic exposures by summing time-weighted exposures that occur at each stage of life (EPA 2009). Using this approach, exposure-to-dose coefficients for internal exposure could be determined; however, guidance that provides this information has yet to be developed.

As stated in the National Research Council's Report in Brief on Biological Effects of Ionizing Radiation (BEIR) VII, *Health Risks from Exposure to Low Levels of Ionizing Radiation: BEIR VII Phase 2* (National Research Council 2006), BEIR VII estimates excess deaths for the sex and age distribution of the U.S. population in terms of the number of excess deaths per million people per absorbed dose, which supports the previously reported dose-to-risk conversion factor estimate for developing LCFs (DOE 2003a). The National Research Council report also shows that the maximum number of excess deaths would be 610 LCFs per million people per person-rem of dose, compared with about 42 out of 100 individuals who are expected to develop solid cancer or leukemia from other causes, assuming a sex and age distribution similar to that of the entire U.S. population. The BEIR VII dose-to-risk conversion factor is essentially equivalent to the estimate of 600 LCFs per million people per person-rem used in the transportation analysis in this *TC & WM EIS*. The health risk effect in the *Draft* and *Final TC & WM EIS* transportation analysis is therefore consistent with BEIR VII in regard to determining the number of LCFs.

58-5 This *TC & WM EIS* does analyze the impacts of the various alternatives on threatened and endangered species. With respect to tank closure, this discussion is presented in Chapter 4, Sections 4.1.7.1 (Alternative 1: No Action), 4.1.7.2.4 (Alternative 2A), 4.1.7.3.4 (Alternative 2B), 4.1.7.4.4 (Alternative 3A), 4.1.7.5.4 (Alternative 3B), 4.1.7.6.4 (Alternative 3C), 4.1.7.7.4 (Alternative 4), 4.1.7.8.4 (Alternative 5), 4.1.7.9.4 (Alternative 6A), 4.1.7.10.4 (Alternative 6B), and 4.1.7.11.4 (Alternative 6C). FFTF decommissioning impacts on threatened and endangered species are addressed in Chapter 4, Sections 4.2.7.1 (Alternative 1: No Action), 4.2.7.2.4 (Alternative 2: Entombment), and 4.2.7.3.4 (Alternative 3: Removal [this was Section 4.2.7.3.3 in the *Draft TC & WM EIS*]). Waste management impacts on threatened and endangered species are addressed in Chapter 4, Sections 4.3.7.1 (Alternative 1: No Action), 4.3.7.2.3 (Alternative 2: Disposal in IDF, 200-East Area Only), and 4.3.7.3.3 (Alternative 3: Disposal in IDF, 200-East and 200-West Areas). Threatened and endangered species are further addressed in Chapter 4, Section 4.4.6.3 (Combination of Alternatives),

Commentor No. 58 (cont'd): Keeley Harding

Chapter 6, Section 6.3.7.2 (Short-Term Cumulative Impacts), and Chapter 7, Sections 7.1.7 (Mitigation) and 7.2.7 (Unavoidable Adverse Environmental Impacts). Long-term ecological risk is addressed in Chapter 5, Sections 5.1.3 (Tank Closure Alternatives), 5.2.3 (FFTF Decommissioning Alternatives), and 5.3.3 (Waste Management Alternatives). While these Chapter 5 sections do not specifically address threatened and endangered species, the analysis presented generally would be applicable to this group of species.

58-6 Comment noted.

Commentor No. 59: Timothy Henwood

From: Timothy Henwood [henfez@gmail.com]
Sent: Thursday, February 11, 2010 6:13 PM
To: tc&wmeis@saic.com
Subject: Comment on Hanford Site Draft Tank Closure

We need to find a better way to boil water than one that leaves thousands of years of deadly byproducts. *59-1*

You are the Department of Energy, not the Department of Big Energy Companies.

This country is founded on the principle of "we the people".

Never forget that and you will make the right decisions.

Regards,

Timothy Henwood
Portland, Oregon

59-1 Nuclear power generation is not within the scope of this *TC & WM EIS*. This EIS addresses proposed actions to retrieve, treat, and dispose of Hanford tank waste; decommission FFTF; and expand waste disposal capacity at Hanford to provide for disposal of on- and offsite DOE waste. The disposal of other waste, including waste associated with commercial nuclear power generation, is beyond the scope of this EIS.

Commentor No. 60: Ineke Deruyter

From: ineke deruyter [ideruyter@hotmail.com]
Sent: Friday, February 12, 2010 1:32 AM
To: tc&wmeis@saic.com; ken.niles@state.or.us
Subject: Clean up Hanford Now.

No new nuclear waste to the site!! Don't make the dump worse than it already is. CLEAN IT UP NOW! Thank you,

Ineke Deruyter-9322 N. Oswego Ave, Portland, OR 97203

60-1

60-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 61: Phyllis Weih

From: pbweih@comcast.net
Sent: Friday, February 12, 2010 7:45 PM
To: tc&wmeis@saic.com
Subject: TC & WM EIS (Tank Closure & Waste Management Environmental Impact Statement)

Dear Ms Durant,

You ask for comments; here they are:

I think about your children, and my grandchildren, and your great-grandchildren, and all the children to come and the increase in cancer that exposure to radiation is known to cause. *61-1*

And then I think of accidents, or equipment failures, or deliberate acts of terrorism. One or more of them will eventually happen. Complex systems theory explains why this is true. *61-2*

I think about the plume of radioactivity coming from Hanford that is already contaminating the soil and groundwater around the site and the elevated levels of radioactive thorium along the Columbia River, and I realize that the radioactive contamination from Hanford has never been contained. NEVER been thoroughly contained! Think about that! And your want me/us to believe that you can bring MORE nuclear waste from around the entire country, and that you will NOW contain this new waste too? I don't believe you will do it. Nor do I believe that you can safely ship thousands of truckloads of the most toxic materials on the planet across thousands of miles safely. *61-3* *61-4*

So I say, I beg, I demand that you save our water, save our salmon, and save generation after generation of people and animals from heartache and death.

Do not bring in off site nuclear waste. Keep it where it is and "contain" it there.

Clean up the existing contamination at Hanford to 99.9% of what is there or is possible, and spend the money to protect the workers. We spend money to go to war; we spend money to bail out institutions that have failed us and yet are "too big to fail"; I don't understand why we can't do this clean up. *61-5* *61-6*

Sincerely,

Phyllis Weih
Portland, OR

61-1 Scientific data indicate that health effects from radiation exposure are more pronounced in children than adults. As discussed in Appendix K, Section K.1.1.6, of this *TC & WM EIS*, a number of authoritative studies provide guidance on risk factors relating health effects to dose. Section K.1.1.6 discusses the scientific evidence relating radiation dose to incidence of cancers, both fatal and nonfatal. The discussion indicates that the fatal cancer risk factor of 0.0006 reflects an age distribution that includes children and is generally regarded as conservative. Appendix Q, Section Q.2.4.2, explains that nuclide-specific risk coefficients, developed using techniques that account for gender and age, were used for the long-term human health impacts analysis.

61-2 Hanford facility operations and security are intended to prevent such incidents from occurring; nevertheless, this *TC & WM EIS* includes analyses of the potential impacts on members of the public resulting from accidents and intentional acts of destruction. The results of these analyses are presented in Chapter 4, Sections 4.1.11, 4.2.11, and 4.3.11. More-detailed descriptions of the accident scenarios and the methods of analysis are presented in Appendix K, Section K.3.

61-3 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

61-4 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

61-5 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD

Commentor No. 61 (cont'd): Phyllis Weih

issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

61-6 Funding to clean up Hanford is beyond the scope of this *TC & WM EIS*.

Commentor No. 62: John Galle

From: John Galle [john.galle.pe@gmail.com]
Sent: Saturday, February 13, 2010 12:42 AM
To: tc&wmeis@saic.com
Subject: Hanford Tank Closure EIS Hearing Comments...

Hello Ms. Burandt-

I attended the public hearing in Portland on the Hanford Tank Closure EIS. I stayed through the initial presentations and listened to a few of the public comment speakers. The hearing was informative. But, I was surprised the DOE only sent one person to fend off what could have almost certainly could have been predicted to be a hostile crowd. I have worked in the nuclear industry for over 20 years, so I feel your pain. I was at the hearing to learn about the cleanup effort since I may seek to work on the project sometime in the future.

I did listen to Mr. Colette speak across the hall before the hearing. And, he repeated some of the same info in the public meeting. Frankly, some of what he said even scared me and I've worked a lot around radioactive material. Anyway, the reason I am writing you is that there are a few issues that he brought up that really need to be addressed head on so that people aren't stirred up into a frenzy:

1 847 people will die from cancer as a result of being exposed to radiation from shipments along the transport route. Mr. Colette said he got this from DOE documents. Having worked in the nuclear industry for so long, I am virtually certain that that number represents some non-credible worst case scenario. Someone from DOE has to refute his assertion and explain how that number was arrived at and what the realistic expected consequences would be. *62-1*

2 Mr. Colette asserted that the DOE finds truck drivers who just aren't smart enough to realize the health hazard from what they are hauling. I am virtually certain, if these people are receiving dose (and they must get some even though you said they did not) that they are subject to the Federal radworker radiation limits. People should know this. *62-2*

3 Mr. Colette asserted that a single accident during transport through Portland, would kill thousands of people and make much of the city unlivable. Again, I am virtually certain that the consequences he stated were from some non-credible worst case scenario. Someone from DOE has to clarify the assumptions made and state the most probable accident consequences. *62-3*

4 Why isn't the DOE recommending removal of the in-ground tanks and the contaminated earth? Now, I am assuming that the following is true. People need to be told that the DOE has investigated all viable methodologies and *62-4*

62-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

62-2 DOE's *Radioactive Material Transportation Practices Manual for Use with DOE O 460.2A* (DOE M 460.2-1A) stipulates carrier/driver requirements for radioactive material and waste shipments. All Federal and contractor entities subject to this manual must perform transportation activities in a manner that meets or exceeds those requirements, except as otherwise specified by the manual. Although DOE has processes and programs in place to monitor carrier performance and safety, it is ultimately the responsibility of the carrier to follow applicable regulations.

Regarding occupational exposure limits, as stated in Appendix H, "Transportation," of this *TC & WM EIS*, DOE Standard 1098-2008 requires that the maximum annual dose to a worker be no more than 100 millirem per year unless the individual is a trained radiation worker, in which case the dose would be administratively limited to 2 rem per year. If an escort is required, the exposure to each individual escort would be administratively limited to 2 rem per year. Note that the maximum annual dose to a transportation worker would be 100 millirem per year unless the individual is a trained radiation worker. For the latter, DOE has processes and programs in place to monitor carrier performance and safety to ensure that carriers are providing proper training and guidance to transportation workers.

62-3 Because radioactive waste analyzed in this *TC & WM EIS* would originate from DOE sites to the east and southeast of Hanford, no waste shipments are expected to pass through or near Portland, Oregon. Appendix H shows the specific routes that were analyzed. Further, Appendix H summarizes the impacts resulting from the most severe reasonably foreseeable potential accident. Based on the results, the risk of an additional LCF from such an accident would be very small.

62-4 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. As required by NEPA, this *TC & WM EIS* addresses the impacts on both the short- and long-term

Commentor No. 62 (cont'd): John Galle

there just is no way to do the work without endangering the workers (stress the importance of this…the folks in the audience didn't seem overly concerned about worker safety), that extensive excavation may potentially cause new or bigger problems, and that a potential delay of the cleanup of X years could result from the expanded scope which in turn would have its own consequences. You could mention added cost, but the audience wasn't really interested in hearing about what would have to be spent. *62-4 cont'd*

5 That the contamination entering the Columbia River is (or will be??) 1500 times the drinking water limits. The DOE needs to state why this is okay. I am assuming that, as in most cases, the solution to pollution is dilution. *62-5*

I hope you find my comments useful and thank you for your presentation at the hearing.

John Galle
2530 Hillcrest Drive
West Linn, OR 97068

human environment. Workers related to the activities being analyzed are part of the human environment, and impacts on workers are presented in Appendix K and Chapter 4, Sections 4.1.10, 4.2.10, and 4.3.10, of this EIS. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

62-5 As discussed in Chapter 5 of this *TC & WM EIS*, DOE acknowledges that benchmark standards could be exceeded in groundwater at the Core Zone Boundary and/or at the Columbia River nearshore at various dates. The term "benchmark standards" as used in this *TC & WM EIS* represents dose or concentration levels that correspond to established human health effects. For groundwater, the benchmark is the MCL, provided that an MCL is available. Ecology may impose additional mitigation measures through future permitting processes or remedial actions under the scope of the TPA.

In reference to the commentor's statement that "contaminants are currently entering the Columbia River at levels greater than 1,500 times the drinking water standard," the location along the Columbia River, the timing, and the constituents to which the commentor refers are not clear. Additional information has been added to this *Final TC & WM EIS* to further describe the groundwater conditions at Hanford. Specifically, the commentor is referred to figures in Appendix U depicting maximum concentrations of several contaminants at various Columbia River nearshore locations, as follows: Figures U–18 and U–19 show chromium concentrations of about 61 and 380 micrograms per liter, respectively (relative to the benchmark standard of 100 micrograms per liter), and most concentrations are below 20 micrograms per liter; Figure U–20 shows a chromium concentration of about 5 micrograms per liter; Figures U–21 through U–23 show similar nitrate concentrations; Figures U–25 and U–26 show strontium concentrations near 320 picocuries per liter (relative to the benchmark standard of 8 picocuries per liter); Figure U–28 shows tritium concentrations of about 14,000 picocuries per liter (relative to the benchmark standard of 20,000 picocuries per liter); and Figure U–34 shows uranium isotope concentrations near 145 picocuries per liter (relative to the benchmark standard of 15 picocuries per liter).

Commentor No. 62 (cont'd): John Galle

DOE believes it is more accurate to say that there are several areas of nearshore groundwater contamination that exceed benchmark standards by one to two orders of magnitude (as opposed to more than three), but that these areas are narrowly confined; that groundwater contamination in the vicinity of operable units is more typically near or below the benchmark; and that groundwater contamination away from operable units (i.e., the bulk of the shoreline) is more than several orders of magnitude below benchmarks.

Commentor No. 63: Ester McGinnis

From: bmcginnis [bmcginn@pacifier.com]
Sent: Saturday, February 13, 2010 4:20 PM
To: tc&wmeis@saic.com
Subject: Hanford

Ester McGinnis, 8331 SW 59th Ave., Portland, OR 97219

I was unable to attend the Feb. 10 public hearing, so I am taking this way of speaking my piece about Hanford.

My complaint about nuclear use, whether for war or peace, is that it is unfinished research. When any new technology becomes available , BEFORE IT IS PRESENTED TO THE PUBLIC FOR GENERAL USE, THE DISCOVERERS AND / OR DEVELOPERS MUST BE HELD ACCOUNTABLE FOR RETURNING THE OBJECT TO THE ELEMENTS IT BEGAN WITH , OR TO A NON-TOXIC SUBSTANCE THAT CAN BE USED FOR ANOTHER PURPOSE.

63-1

In the case of nuclear waste this has not been done, is still not a subject of research (or so it seems--over 60 years of research/use) and we still have no solution for the ever mounting waste. Waste that is known to cause cancer and other serious health problems. Those who have power in this enterprise still disregard the public GOOD in making decisions about places like Hanford, and propose actions that are known to do damage to the vulnerable.

I have hoped that in my lifetime I would know that people of conscience would understand what I am saying ---and at last I have had the opportunity to observe a small step in that direction---a man who has developed a process to turn oil derived plastics back into a usable oil !! Halleluiah !!!

63-1 One of the purposes of this *TC & WM EIS* is to analyze the range of reasonable alternatives to safely retrieve and treat radioactive, hazardous, and mixed waste from the tank systems; close the SST system; and store and/or dispose of the waste generated from these activities at Hanford. DOE acknowledges that long-term actions are required to permanently reduce the risk to human health and the environment posed by the waste in the tank systems.

Commentor No. 64: Bobbie Morgan

From: Bobbie Morgan [morgan.bobbie@gmail.com]
Sent: Sunday, February 14, 2010 1:26 PM
To: tc&wmeis@saic.com
Subject: Draft Tank Closure and Waste Management EIS/Hanford

Dear Department of Energy Staff:

I object to the proposed "preferred alternative" TCWMEIS that would use Hanford as a national radioactive waste dump for nuclear weapons and power programs. Importing radioactive and hazardous waste to Hanford, when the current tanks are leaking into the Columbia, and spreading into local groundwater, is unconscionable. Instead, we need to clean up the awful, radioactive mess that is already at Hanford (tanks, barrels, unlined trenches, FFTF reactor). *64-1*

The groundwater impacts of the current contaminated waste are already treacherous. Carbon tetrachoride, as an example, is a known carcinogen and is leaking into groundwater at Hanford, right now, as I write this, at levels 50 times safe drinking water standards. This contaminant alone would therefore be responsible for the deaths of 5 of every 1,000 adults who drink this water. *64-2*

Your duty, as a government official working for the citizens of this country, is to create the very best policies to ensure public safety. Your duty is NOT to write "expedient" policies or to make life easier for the Department of Defense and their very troublesome weapons or for the nuclear power industry, whose energy production is not economically or ethically viable. *64-3*

Please go back to the drawing board and write a TCWMEIS that actually cleans up Hanford.

Thank you.

Bobbie Morgan
978 Aaron Avenue
Bainbridge Island, WA
xxx-xxx-xxxx

64-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford.

One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms by landfill closure, selective clean closure, or clean closure. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks, including remediation of the contamination in the vadose zone to help prevent further contamination from entering the environment.

64-2 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

64-3 This *TC & WM EIS* analyzes proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms; decommission FFTF; and upgrade/expand waste management capabilities at Hanford to better support ongoing cleanup actions occurring under the TPA.

Commentor No. 65: Brooke Thompson

From: Brooke [brooke@raincity.com]
Sent: Sunday, February 14, 2010 8:17 PM
To: tc&wmeis@saic.com
Subject: Public Comment

Dear Department of Energy Staff:

I am writing this on Valentine¹s Day, as a valentine to my children and grandchildren. I urge you to find another way to dispose of the nuclear waste that TCWNEIS deems a ³preferred alternative². *65-1*

The Hanford site is already in jeopardy. Its FFTF reactor, its unlined trenches, its barrels and tanks NOW leaking radioactive waste into the groundwater and into the Columbia River‹these need to be cleaned up. To add more hazardous waste to the site compounds and befouls an existing morass of toxins. *65-2* *65-3*

A fool is a person who keeps on doing the same thing and expects different results.

- Albert Einstein

I urge you to respond to the problem of the military and power industry by standing firm: public safety and environmental protection is a priority.
Do not sweep this kind of hazard under the public policy carpet for another generation of cancer victims to try to clean up. *65-4*

Please use wisdom and foresight in fashioning a TCWNEIS that addresses the source of nuclear waste and removes the threat that already exists at Hanford and other sites across the country. *65-5*

Thank you,

Brooke Thompson
611 Winslow Way West
Bainbridge Island, WA 98110
xxx-xxx-xxxx

65-1 Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

65-2 The purpose of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

65-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections discuss the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

Commentor No. 65 (cont'd): Brooke Thompson

65-4 Nuclear energy and military weapons production, as well as the management of their resulting waste, are not within the scope of this *TC & WM EIS*. The current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

65-5 Comment noted.

Commentor No. 66: Kyle Cleys

From: KYLE A CLEYS [kcleys@q.com]
Sent: Monday, February 15, 2010 7:44 PM
To: tc&wmeis@saic.com
Subject: Comments on the Draft TC & WM EIS

Dear Mary Beth Burandt and U.S. Department of Energy,

I wish to make the following comments on the Hanford Draft Tank Closure and Waste Management Environmental Impact Statement:

1. Regarding retrieval of high-level nuclear waste from underground tanks, I would like to see 99.9% of the tank wastes removed or at least to the maximum amount technically possible. *66-1*
2. A second Low-Activity Waste Vitrification Facility should be pursued now so that waste treatment can be completed as soon as possible. The supplemental treatment options of steam reforming, grout and bulk vitrification should be abandoned since they are not as effective. *66-2* *66-3*
3. After removing waste from the Single-shell tanks the tanks themselves should be removed along with contaminated soil and ancillary equipment (the "clean closure" alternative). *66-4*
4. The Fast Flux Test Facility should be removed and the site restored. Entombment is not an acceptable solution. In addition, special components should be treated at Hanford to the greatest extent possible rather than shipping these wastes to the Idaho National Laboratory. *66-5*
5. Waste generated from on-site cleanup should be stored in Hanford landfills only to the extent that they won't ever endanger groundwater or the Columbia River. In addition, existing waste in unlined soil trenches and from tank leaks should be treated and appropriately disposed of. *66-6*
6. Under no circumstances should additional waste be brought to Hanford. The focus should remain on cleaning up what is already there rather than adding more waste. *66-7*

I have to question what sort of people would leave these highly toxic wastes in the environment to endanger future generations. It is our responsibility as a society to clean these wastes up to the best of our ability since we generated them. Cost should not even be a factor in these considerations. This cleanup has been going on for decades now and it is past time to quit stalling and to do the right thing. *66-8*

Sincerely,

Kyle Cleys
3959 NE 40th Avenue
Portland, OR 97212

66-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

66-2 This EIS analyzed supplemental LAW treatment capability by building new treatment facilities that are either part of (expanded LAW capacity) or separate (bulk vitrification, steam reforming, or cast stone) from the WTP. As discussed in Chapter 2, Section 2.12, DOE does not have a preferred alternative regarding supplemental treatment for LAW. DOE believes it is beneficial to study further the potential cost, safety, and environmental performance of supplemental treatment technologies. DOE is committed to meeting its obligations under the TPA regarding supplemental treatment for LAW.

66-3 Comment noted.

66-4 Tank Closure Alternatives 4, 6A, and 6B involve selective or complete clean closure of the SST system. As described in Chapter 2, Section 2.5, Alternative 4 would involve selective clean closure of the BX and SX tank farms by removing the tanks and excavating soil to a depth of 3 meters (10 feet) below these tanks; all other SST systems would be closed in place. As described in Section 2.5, Alternative 6A would involve clean closure by removing all SST systems and excavating all contaminated soil to a maximum depth of groundwater. As described in Section 2.5, Alternative 6B would involve clean closure by removing all SST systems, but would only excavate soil to a depth of 3 meters (10 feet) under the tanks.

66-5 Comment noted.

66-6 Chapter 1, Section 1.4, states that DOE has committed to disposing of LLW at Hanford in lined trenches, a change from the past disposal practice of using unlined trenches. DOE ensures that disposal activities are protective of the environment and meet regulatory requirements (see Appendix E, Section E.3.3, for a description of the evolution of past disposal practices). All LLW generated by the tank closure or FFTF decommissioning activities would be disposed of in

Commentor No. 66 (cont'd): Kyle Cleys

lined trenches. Currently, Hanford's solid LLW is sent to the LLBGs; or, if the waste is from CERCLA cleanup activities, the waste is sent to the Environmental Restoration Disposal Facility (ERDF) (see Chapter 3, Section 3.2.12.1.4).

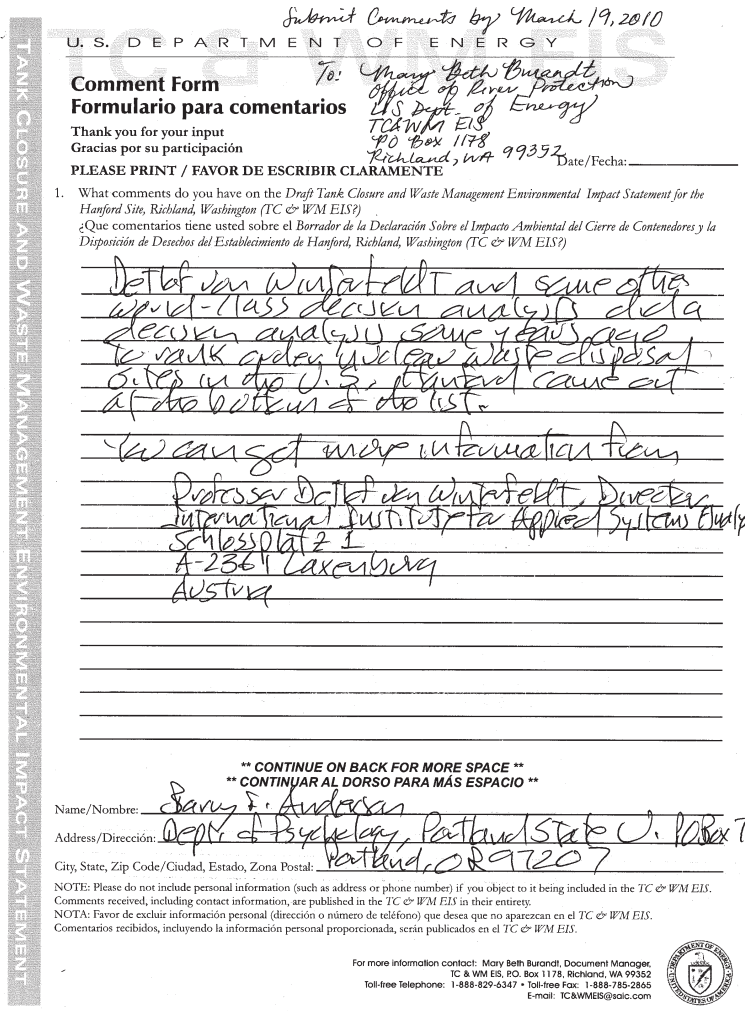
Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

66-7 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

66-8 Chapter 2, Section 2.11, of this EIS summarizes and compares the relative costs of the alternatives. See response to comment 66-1 regarding future DOE decisions.

Commentor No. 67: Barry F. Anderson



Submit Comments by March 19, 2010

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

To: Mary Beth Burandt
Office of River Protection
US Dept. of Energy
TC&WM EIS
PO Box 1178
Richland, WA 99352

Date/Fecha: _____

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

Detlef von Winterfeldt and some of the agreed-upon decision analysis data decision analysis some years ago to rank order nuclear waste disposal sites in the U.S. I cannot count at the bottom of the list.

You can get more information from
Professor Detlef von Winterfeldt, Director
International Institute for Applied Systems Analysis
Schlossplatz 1
A-2361 Laxenburg
Austria

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Barry F. Anderson
Address/Dirección: Dept. of Psychology, Portland State U. POBox 751
City, State, Zip Code/Ciudad, Estado, Zona Postal: Portland, OR 97207

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

67-1

67-1 The study of nuclear waste disposal sites in the United States is not within the scope of this *TC & WM EIS*. The purpose of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites.

Commentor No. 68: Robert G. Aungier

U.S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2-10-2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*

Dear Mary Beth Burandt, Document Manager,
U.S. Department of Energy 2-10-2010
P.O. Box 1178 Richland, WA 99352
This evening I attended the EIS forum at the DoubleTree Hotel in Portland, OR.
I admit that I have followed the DOE's clean up efforts at the Hanford nuclear site from a distance over the last five to ten years.
Tonight I greatly appreciated the opportunity from the DOE to understand what's being proposed. In keeping with all the speakers who provided comments at the Hearing Tonight, these are my conclusions.
First, clean up all 53 million gallons of buried nuclear WASTE to the 99.9% level. All the tanks must be pulled from the ground and the ground underneath the tanks must be ~~ex~~ excavated and treated as well. Certainly, there is high health Risk to workers exposed in the process. I encourage the DOE to explore and ~~utilize~~ use of Robotics and drones to do the most hazardous aspects of this clean up. The technology of the drone/ROBOTIC efforts may be used at other nuclear sites across the U.S., potentially saving human lives in these efforts (over)

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Robert G. Aungier
Address/Dirección: 467 8th Street
City, State, Zip Code/Ciudad, Estado, Zona Postal: Lake Oswego, Oregon 97034-2908

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
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For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

68-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

68-2 Many of the technologies that DOE anticipates using allow work to be accomplished with low exposure of workers. For example, as described in Appendix E, the various tank waste retrieval technologies would involve the use of remotely controlled and robotic equipment, and many of the waste treatment operations at the WTP would be performed remotely. As discussed in Appendix K, Section K.2, DOE and its contractors would implement controls to limit the exposure of individual workers for all activities in accordance with applicable regulations and guidance (10 CFR 835; DOE Standard 1098-2008). Site procedures and job control plans would incorporate ALARA techniques such as reducing time of exposure, increasing the number of workers and/or shielding, or using remote operations. DOE uses robotics when practical as a means of limiting worker exposure. As individual projects proceeded, DOE and its contractors would continue to look for ways to reduce worker doses. Chapter 7, Section 7.1.10, contains additional information regarding methods of protecting workers.

Commentor No. 68 (cont'd): Robert G. Aungier

Hanford is not to receive any more radioactive, hazardous wastes from other sites in the U.S. It is absolutely insane and ridulous that DOE is proposing shipping ~~waste~~ radioactive waste by rail and truck throughout the United States. There is way too much risk in this proposal. DOE, take it off the table, do not transport nuclear waste from site to site now, next year or ever.

Clean up Hanford now. The miles of trenches and ditches that contain radioactive waste must be cleaned up at Hanford now.

As a concerned citizen, it makes the most sense to proceed with the 99.9% waste removal from the Hanford tanks. Do everything, with the aid of technology (drones/Robotics, etc) to deactivate the radioactive waste now at Hanford. Bring NO more nuclear waste to Hanford – NO trucking/no rail shipping of nuclear waste in my United States. Respectfully, Robert G. Aungier OR 467 8th St. Lake Oswego, 97034

68-3

68-4

68-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

68-4 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 69: Roger Cole

TC & WM EIS
P.O. Box 1178
Richland, WA 99352

February 11, 2010

Greetings:

I was at the Portland hearing tonight and did not stay until my name was called to testify as it ran kind of late. I did get a sense that folks present were not happy about the EIS under consideration. There was a lot of anger and frustration.

The biggest thing that I am concerned about was covered a number of times in testimony and that is bringing in new waste from other parts of the country. That just won't fly. Citizens of Washington approved an initiative in 2004 banning the importation of radioactive waste, but it was overturned in court. We have a radioactive stew brewing in Hanford. It makes no sense to truck in more waste. That waste would go through big Northwest cities. That is a big safety risk. Don't bring in more waste until you get the existing mess cleaned up. *69-1*

Leaky tanks have contaminated the ground water that is finding its way into the Columbia River which people swim in and get their water from. Something must be done about these tanks. They need to be 99.9% cleaned up. To leave 1% of the liquid in the ground is to leave the worst part. *69-2*

If the Fast Flux Test Facility is no longer being used, it should be removed, not entombed. *69-3*

I care about the Columbia River. I swim in it. I sail on it. I used to fish on it. I care about the salmon in the river. I don't want radioactive waste left over from a weapons program before I was born in my river. We've to fix the problems of Hanford. We've got to do it right. We can't walk away from Hanford with the job only partially finished. We need to clean up this mess. The current EIS doesn't go far enough. *69-4*

Sincerely,

Roger Cole
5505 E. Evergreen Blvd
Vancouver, WA 98661

69-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

As shown in the Summary of this *TC & WM EIS*, Section S.5.3; Chapter 2, Section 2.8.3.10; and Chapter 4, Section 4.3.12, it is unlikely that the estimated total public radiation exposures from transporting radioactive waste to Hanford for disposal would result in any additional LCFs. No shipments analyzed in this EIS would pass around or through large West Coast cities such as Portland, Oregon, and Seattle, Washington.

69-2 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or are suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the SSTs, treat and dispose of this waste, and close the SST farms by landfill closure, selective clean closure, or clean closure. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks, including remediation of the contamination in the vadose zone.

The decision to leave 0.1 percent, 1 percent, or more of the waste in the SSTs is one of the decisions supported by this *TC & WM EIS* (see Section S.1.3.1 of the *TC & WM EIS* Summary and Chapter 1, Section 1.4.1). With regard to the disproportionate amount of radioactivity in the residues at the bottom of the tanks, DOE currently does not have a technical basis for making more-specific assumptions about the expected compositions of the waste "heels" that would remain in the tanks after retrieval. Retrieval has been completed on only a small number of SSTs and not much is known about the behavior of, or ability to remove, small volumes of residual waste. However, the tank closure process, which includes detailed examinations of the tanks and residual waste, will require preparation of a performance assessment and a closure plan. These required documents will provide the information and analysis necessary for DOE and the

Commentor No. 69 (cont'd): Roger Cole

regulators to make specific decisions on what levels of residual tank waste are acceptable in terms of short- and long-term risks.

69-3 The commentor's preference for removal of FFTF (FFTF Decommissioning Alternative 3) is noted. However, although nearly all elements of FFTF and the two adjacent support facilities would be removed under this alternative, the lower portion of the Reactor Containment Building (RCB) concrete shell would remain. This would be backfilled with either soil or grout to minimize void space. The area would be regraded and revegetated, with no need for a barrier. DOE issued a ROD (66 FR 7877; January 26, 2001) for the *NI PEIS* (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated.

69-4 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 70: Krista Thie and Daryl Hoyt

From: Krista & Daryl [krista@gorge.net]
Sent: Friday, February 19, 2010 11:38 PM
To: tc&wmeis@saic.com
Subject: Comment Hanford

Dear EIS team -

If the USA is going to produce radioactive waste - it also must contain it. Why is there still any question that DOE has cleaned up thoroughly the Hanford Nuclear Site? Any amount of high level waste reaching the Columbia River is unacceptable. If we are creating a technological/scientific approach, we need to keep a clear scientific approach and have zero measurable amounts of this stuff reaching any place where it could contaminate US. All must be contained and treated. *70-1*

Our grandchildren depend on our accountability.

Thank you for coming to Hood River - I was unable to attend but glad my friends and community was able to.

Regards,

Krista Thie & Daryl Hoyt
POB 2046
White Salmon WA
98672-2046

70-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 71: Pat Hazlett

From: Pat Hazlett [hazlettp@gmail.com]
Sent: Saturday, February 20, 2010 11:35 AM
To: tc&wmeis@saic.com
Subject: Hanford
Attachments: Hanford.rtf

7215 SW 8th Ave
Portland, OR 97219
February 9, 2010

TC & WM EIS
P.O. Box 1178
Richland, WA 99352

To Whom It May Concern:

I am outraged that after so many years and setbacks Hanford is still not being cleaned up to the degree necessary for the environment and people living in the Columbia River area. If this isn't bad enough it is being proposed that it be a storage facility for more nuclear wastes. *71-1*

I am in favor of no more waste added to Hanford. I am saying "No" to Hanford being a national radioactive and radioactive-hazardous waste dump. We need to limit wastes in Hanford landfills to amounts and types of Hanford clean-up wastes which won't cause future leakage and violate cancer risk and other standards. And finally we need to dig up plutonium and other "Transuranic" wastes in unlined soil disposal ditches and tank leaks, treat the wastes and dispose of them in deep geologic repositories. We need to dig up other wastes from unlined soil ditches and tank leaks, treat them, and dispose of them in a regulated commercial radioactive waste facility which is not above drinkable groundwater or next to a river. *71-2*

I am also concerned about the increased risks of cancer from transportation of radioactive wastes. I live very close to Interstate 5 and the thought of this added exposure is not acceptable to me. *71-3*

I would appreciate a response to this letter. *71-4*

Pat Hazlett

71-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

71-2 TRU waste, including waste contaminated with plutonium, in unlined soil disposal trenches is not within the scope of this EIS. However, information on this waste is included in Appendix S, "Waste Inventories for Cumulative Impact Analyses." The scope of this *TC & WM EIS* includes decisions on storage, retrieval, treatment, and disposal of tank waste and closure of the SST system. This closure includes the tank system, along with the vadose zone as impacted by the tank farms (i.e., past leaks). Any LLW generated by the tank closure or FFTF decommissioning activities would be disposed of in the LLBGs, in one of the two active trenches (31 and 34); an IDF; and/or the River Protection Project Disposal Facility (RPPDF), all of which would have liners.

71-3 As shown in the Summary of this *TC & WM EIS*, Section S.5.3; Chapter 2, Section 2.8.3.10; and Chapter 4, Section 4.3.12, it is unlikely that the estimated total public radiation exposures from transporting radioactive waste to Hanford for disposal would result in any additional LCFs. Because radioactive waste analyzed in this *TC & WM EIS* would originate from DOE sites to the east and southeast of Hanford, Interstate 5 would not be used.

71-4 The comments made in the letter, along with a response to each comment, are included in this CRD, which is a volume of this *Final TC & WM EIS*.

Commentor No. 72: Eileen Garvin

From: Eileen Garvin [eileengarvin@gmail.com]
Sent: Saturday, February 20, 2010 2:41 PM
To: tc&wmeis@saic.com
Subject: Hanford Tank Closure and Waste Management Environmental Impact Statement

Dear Ms. Burandt,

Please clean up the existing pollution at Hanford before you consider shipping more radioactive waste to the area.

I grew up in eastern Washington and have lived with this mess my entire life. *72-1*

It seems a pretty simple situation for a complex problem — clean up the mess you already made, that everyone agrees is a problem, before adding to it.

(If my cracked milk glass is leaking all over the table, do I keep pouring milk into it?)

I urge you to stick to the problems at hand:

Clean up the 55-million gallons of buried radioactive waste *72-2*

Do not ship any more radioactive waste from across the county to handford *72-1 cont'd*

Clean up the nuclear waste that has already leaked into the Columbia River. *72-3*

Future generations will thank you!

Best,

Eileen Garvin

72-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

72-2 The scope of this *TC & WM EIS* includes analysis of the environmental impacts of storage, retrieval, treatment, and disposal of tank waste and closure of the SST system. With regard to other cleanup actions, DOE is implementing an extensive, ongoing cleanup program at Hanford under the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies recently completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates. As noted in Chapter 1, Section 1.4.2, the six sets of cribs and trenches (ditches) that are contiguous to the SSTs are CERCLA past-practice units. These would fall under the barriers placed over the SSTs during closure. They are evaluated in this EIS as part of a connected action because they would be influenced by barrier placement. However, closure of these CERCLA past-practice units is not part of the proposed actions for this EIS. Closure of these units would be addressed at a later date, using the best-available information for technologies that are feasible and appropriate to address these units.

72-3 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 73: Joe Mitchell

From: Joe Mitchell [jjmit@comcast.net]
Sent: Sunday, February 21, 2010 1:58 AM
To: tc&wmeis@saic.com
Subject: Hanford Cleanup

February 20, 2010

Dear USDOE,

I am very much in favor of a TOTAL clean-up of the Hanford site and very much against transporting nuclear and/or toxic waste to the Hanford site. No more! *73-1*

It is our responsibility to neutralize this threat to our wellbeing for ourselves and future generations.

We have amazing creative capacities. We need to use them. We need to fund them.

We need to more than adequately fund research into solving the problem of radioactive waste; and, in the mean time, use the technologies we now possess to clean up this mess. *73-2*

This is a project not unlike the space program. It is important. We need total clean-up. We need to fund it.

Sincerely,

Joe Mitchell
5232 SE Madison St.
Portland, OR 97215-2667

73-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

73-2 This EIS analyzed supplemental LAW treatment capability by building new treatment facilities that are either part of (expanded LAW capacity) or separate (bulk vitrification, steam reforming, or cast stone) from the WTP. As discussed in Chapter 2, Section 2.12, DOE does not have a preferred alternative regarding supplemental treatment for LAW. DOE believes it is beneficial to study further the potential cost, safety, and environmental performance of supplemental treatment technologies. DOE is committed to meeting its obligations under the TPA regarding supplemental treatment for LAW.

Appendix E, Section E.1.3.3.1, discusses the DOE Technology Readiness Assessment that included Business Case No. 7 (LAW First and Bulk Vitrification with Tank Farm Pretreatment), i.e., early startup of the LAW treatment process. However, at the time of the *Draft TC & WM EIS* preparation, DOE had not made a decision on whether to support implementation of this business case. Since then, DOE has commissioned an external technical review of the system planning for alternative supplemental treatment of LAW at Hanford (Kosson et al. 2008). The report (Kosson et al. 2008) from this review concluded that, although the current schedule for completion of the WTP LAW Vitrification Facility and supporting facilities could support early treatment of LAW in 2014, such early startup would require an interim pretreatment capability and the means for disposition of secondary waste. Since 2008, DOE has been evaluating the transition of the WTP from construction to commissioning. Information on this strategy is provided in Appendix E, Section E.1.3.3.2, of this *Final TC & WM EIS*. The *2020 Vision* (WRPS and BNI 2011) evaluates some of the elements identified in earlier DOE reports, but focuses on commissioning of the WTP project and activities essential to starting up the LAW Vitrification Facility, the Analytical Laboratory, and the BOF, as well as the Pretreatment Facility and the HLW Vitrification Facility. For more information regarding the *2020 Vision*, please see Appendix E, Section E.1.3.3.2.

Commentor No. 74: Katharine Kremer and Stephen Young

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 15 Feb 2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

Dear Friends,

We are very much in favor of a TOTAL clean-up of the Hanford site and very much against transporting nuclear and/or toxic waste to the Hanford site.

It is our responsibility to neutralize this threat to our well being for ourselves and future generations.

We have amazing creative capacities and need to more than adequately fund research into solving the problem of radioactive waste and, in the meantime, apply the technologies we now possess to clean up this mess! This is a project not unlike the space program or the defense program thatled to the end of WW II and, ironically, the problem we now are facing.

Cleaning up part of the mess is not good enough in this case.

Thank you!

74-1

74-2

**** CONTINUE ON BACK FOR MORE SPACE ****
**** CONTINUAR AL DORSO PARA MÁS ESPACIO ****

Name/Nombre: Katharine Kremer and Stephen Young

Address/Dirección: 1040 Oak Terrace

City, State, Zip Code/Ciudad, Estado, Zona Postal: Lake Oswego OR 97034

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
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For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

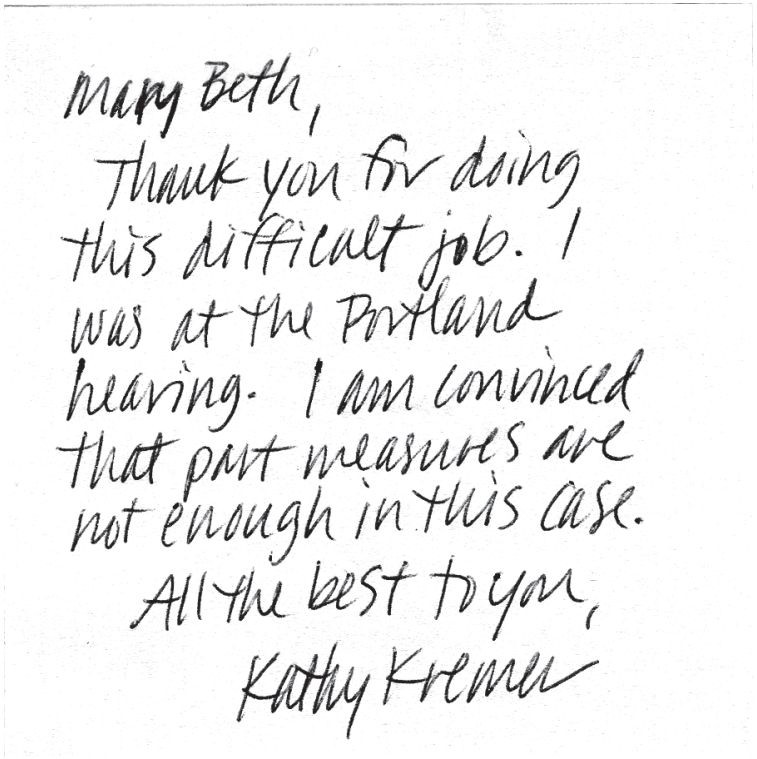
74-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

74-2 One of the decisions to be based on this *TC & WM EIS* is the selection of additional waste treatment capability, which could include a second LAW vitrification facility. The timing of the startup of the WTP LAW Vitrification Facility and a facility for additional waste treatment capability would depend on a number of factors, such as availability of funding and priorities within DOE.

Appendix E, Section E.1.3.3.1, discusses the DOE Technology Readiness Assessment that included Business Case No. 7 (LAW First and Bulk Vitrification with Tank Farm Pretreatment), i.e., early startup of the LAW treatment process. However, at the time of the *Draft TC & WM EIS* preparation, DOE had not made a decision on whether to support implementation of this business case. Since then, DOE has commissioned an external technical review of the system planning for alternative supplemental treatment of LAW at Hanford (Kosson et al. 2008). The report (Kosson et al. 2008) from this review concluded that, although the current schedule for completion of the WTP LAW Vitrification Facility and supporting facilities could support early treatment of LAW in 2014, such early startup would require an interim pretreatment capability and the means for disposition of secondary waste. Since 2008, DOE has been evaluating the transition of the WTP from construction to commissioning. Information on this strategy is provided in Appendix E, Section E.1.3.3.2, of this *Final TC & WM EIS*. The *2020 Vision* (WRPS and BNI 2011) evaluates some of the elements identified in earlier DOE reports, but focuses on commissioning of the WTP project and activities essential to starting up the LAW Vitrification Facility, the Analytical Laboratory, and the BOF, as well as the Pretreatment Facility and the HLW Vitrification Facility. For more information regarding the *2020 Vision*, please see Appendix E, Section E.1.3.3.2.

Commentor No. 74 (cont'd): Katharine Kremer and Stephen Young



Mary Beth,
Thank you for doing this difficult job. I was at the Portland hearing. I am convinced that part measures are not enough in this case.
All the best to you,
Kathy Kremer

Response side of this page intentionally left blank.

Commentor No. 75: Rebecca Durr

Feb. 15, 2010

USDOE
P.O. Box 1178
Richland, WA 99352

Dear USDOE,

I would like to comment on my understanding of your environmental impact review of your alternative to cleaning up Hanford.

It seems your alternative is not to clean it up & also to dump more waste there. Hanford is already the most contaminated site in the western hemisphere & for as long as I can remember you have not been cleaning it up. *75-1*

I believe that this is unacceptable. We don't even know everything that has been dumped there or how it has changed through the years. We do know that contaminates have been migrating to the river & the water table, causing unknown dangers. The Columbia River is a magnificent river with ecological, cultural, & historical significance. How can you allow the desecration of this treasure? *75-2*

Please - don't even consider dumping more waste there. We have a serious problem there & it's time we faced up to our obligation to repair the damage *75-3*

75-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

75-2 Among the important elements of the analyses presented in this *TC & WM EIS* are evaluations of the effects that the Tank Closure, FFTF Decommissioning, and Waste Management alternatives could have on migration of contaminants to the river and the potential for long-term impacts on aquatic and riparian ecological resources. Regarding waste management at Hanford, the commentor is referred to Chapter 3, Section 3.2.12.1, Waste Inventories and Activities. Chapter 5, Sections 5.1, 5.2, and 5.3, address analysis of the long-term environmental consequences of implementing the different alternatives on ecological resources (i.e., ecological risk). Included in this analysis is a determination of the impacts of a number of constituents of potential concern (COPCs) on Columbia River aquatic and riparian resources. For a detailed discussion of the impacts of the alternatives on Columbia River ecological resources, the commentor is referred to Appendix P, Section P.3, Impacts on Columbia River Aquatic and Riparian Resources Resulting from Future Contaminant Releases.

75-3 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 75 (cont'd): Rebecca Durr

we've already caused. Let's start cleaning up the mess & let's continue to monitor the health of all aspects of that area, & not stop until we have restored the land & it is once again safe for plants, animals, birds, fish, and people. When you know that it's safe for your grandchildren to swim in the water, dig in the dirt, eat the fish, & breathe the air, then you will know you have done your job well. And when that day comes, let's erect a monument so future generations will know we made a terrible mistake & didn't rest until we corrected it. It will be a warning for the future not to take an action if we do not know all the consequences from that action, no matter how urgent the situation may seem.

75-3 cont'd

Many years ago we did not know how to dispose of nuclear waste, and we still do not know – that is what you should be trying to find out, instead of adding to the piles of contamination along the Columbia River.

75-4

Very truly,
Rebecca Durr
2703 Riverview Drive
Aberdeen, WA 98520

75-4 Regarding research on ways to dispose of nuclear waste, research and development (R&D) on nuclear waste disposal methods began more than 50 years ago. The HLW vitrification treatment technology, for example, has been used around the world for decades. This *TC & WM EIS* analyzes the potential impacts of vitrification and other treatment technologies, waste-form performance, and closure options.

Commentor No. 76: P. Anna Johnson

P. ANNA JOHNSON
6934 NE Thirteenth Avenue Portland, OR 97211
[redacted] · pannaj@mercedlake.com
www.pannajohnson.com

February 15, 2010

To Whom It May Concern:

We call the river "Columbia" after the man who sailed across the Atlantic to find gold for the King and Queen of Portugal. The creation of the river, and the fertile land surrounding it, took millions of years. Then, for thousands of years, there were people who were nourished by fish from the river. They recognized that the river was sacred and they treated it kindly, as though it was a part of their family.

Then other people came, and they buried poison in the land near the river -- poison strong enough to kill the plants and the animals upon contact. Now the poison is spreading through the ground to the once clean river. Fish are dying. Birds are dying. People are dying. And now there is talk about bringing even more poison to the site.

You say that restoring the land and the river to its pristine condition would cost too much money. You have plans for bringing more poison to the region. When will we learn? When will we ever learn?

Sincerely,

P. Anna Johnson

76-1

76-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 77: Carrie Anderson

From: Carrie Anderson [treelady@cet.com]
Sent: Monday, February 22, 2010 6:39 PM
To: tc&wmeis@saic.com
Subject: I oppose truckloads of radioactive waste being dumped at Hanford

I cannot believe that we have circled back to this ridiculous option. Hanford is STILL a disaster. The waste is leaking into the Columbia watershed which will eventually end up in the river and then thePacific Ocean. This ocean is NOT separated from the rest of the oceans on the planet. It WILL wash up onto the east coast eventually!! *77-1*

How can the "preferred alternative" to **make Hanford a national radioactive waste dump without fully cleaning up the existing contamination on site** be a SANE response to nuclear waste disposal. *77-2*

Anyone who is paying attention knows there is NO AWAY to throw things anymore.

Any toxins that are thrown away will just keep turning up in our backyards and water sources!! *77-3*

IF we have NO SANE place to dispose of these deadly materials why consider producing more?? *77-4*

I oppose truckloads of radioactive waste being dumped at Hanford *77-5*

Carrie Anderson
Urban Forest Council

Any fool can destroy trees. They cannot defend themselves or run away.

And few destroyers of trees ever plant any... John Muir, naturalist, explorer, and writer (1838-1914)

77-1 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this TC & WM EIS is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

77-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

77-3 Both DOE and Ecology acknowledge the need to make choices regarding future storage, treatment, and disposal of the waste associated with the SST system. One of the major purposes of this TC & WM EIS is to identify the impacts associated with waste-disposal options.

77-4 Although the waste generated from production activities (e.g., nuclear energy and weapons) is not within the scope of this TC & WM EIS, the management of waste generated from Hanford environmental cleanup activities is one of the proposed actions in this EIS. This TC & WM EIS analyzes disposal options for various types of waste (e.g., LLW, MLLW, HLW), as well as treatment options to convert waste to a form that renders it safe for disposal.

77-5 See response to comment 77-2 for a discussion on the transport and disposal of offsite waste.

Commentor No. 78: Richard Schramm

From: Schramm, Richard : CO IS [RSchramm@LHS.ORG]
Sent: Monday, February 22, 2010 7:58 PM
To: tc&wmeis@saic.com
Subject: Please clean up and preserve Hanford

To Whom It May Concern:

The U.S. Energy Department's plan to import low-level and mid-level radioactive waster from other sites in our country to Hanford after 2022 should be thrown out. Hanford is already one of the most polluted places on Earth and as such no more radioactive waste should be brought to this area for storage. And the fact that Hanford is so close to the Columbia River (i.e., immediately adjacent to it) is another excellent reason that no more radioactive materials should be brought there for storage. Instead, this is a unique area for wildlife that should be preserved in some kind of national monument or park. The Hanford Reach is one of the last great salmon spawning beds and Handford itself is home to wild grasses and wildlife that represent one of the few remaining preserves of what this area was like before man came on the scene to develop it. As such, it should be protected and one should not add injury to insult be bringing more radioactive materials to the site. Instead, it should be cleaned up sooner, rather than later, and any future radioactive materials should be stored in dry, stable geologic formations where there is little water to leach out radioactive elements, such as in Nevada or New Mexico, not right next door to one of the largest rivers in our country. Thank you for taking the time to consider my thoughts on this important matter. *78-1* *78-2* *78-3*

Richard Schramm
3024 N.E. Bryce Street
Portland, OR 97212
(xxx)xxx-xxxx
rschramm@lhs.org

78-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

78-2 As noted in Chapter 3, Section 3.2, General Site Description, on June 9, 2000, the President issued a proclamation (65 FR 37253) establishing the Hanford Reach National Monument on approximately 78,900 hectares (195,000 acres) of Hanford. Much of this land borders the Columbia River. This proclamation recognized the unique character and biological diversity of the area, as well as its geologic, paleontological, historic, and archaeological significance. DOE manages land within the monument that is not subject to existing agreements; however, DOE consults with the Secretary of the Interior when developing any management plans affecting these lands.

See response to comment 78-1 for a discussion on the transport and disposal of offsite waste.

78-3 Regarding the safe disposal of waste generated from nuclear energy production, the current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

Commentor No. 79: Gabe Bohnee, Director, Environmental Restoration and Waste Management, Nez Perce Tribe

Nez Perce
ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT
P.O. BOX 365 · LAPWAI, IDAHO 83540-0365 · (208) 843-7375 / FAX: 843-7378

February 18, 2010

Ms. Mary Beth Burandt, Document Manager
Office of River Protection
U.S. Department of Energy
P.O. Box 1178
Richland, WA 99352

Re: Comment Extension Request on the *Draft Tank Closure EIS*

Dear Ms. Burandt

The Nez Perce Tribe's Environmental Restoration and Waste Management Division (ERWM) is reviewing the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington [DOE/EIS-0391]* (TC/WM EIS) for the Nez Perce Tribe (Tribe). This review has been extensive and time consuming, where the ERWM has recognized a need for more time to review the impacts brought forth through this document. Therefore, the ERWM is seeking an extension of 45 days to accommodate the concerns of the Nez Perce Tribe.

The protection of cultural and natural resources at Hanford is of great importance to the Tribe, where this area is encompassed by the Tribe's "Usual and Accustomed" Treaty resource areas, via the Treaty of 1855 between the United States and the Tribe. With long-term potential impacts to this area and the Columbia River, the ERWM work needs to be thorough in technical and policy aspects affecting the Tribe. Lastly, this document and the comments generated by the Tribe need to be completed through the Tribe's policy board, the Nez Perce Tribal Executive Committee (NPTEC), which has a time scale that factors into our extension needs.

ERWM appreciates the longer than normal review period given for the TC/WM EIS, but like other stakeholders and the public, have been overwhelmed with the magnitude of this document. The ERWM would appreciate your consideration in this matter and look forward to hearing your response. If you have any questions please contact David Bernard, davidb@nezperce.org, or Stan Sobczyk stans@nezperce.org of my staff or 208-843-7375.

Sincerely,

Gabe Bohnee
ERWM Director

Cc: David Brockman, DOE-RL Site Manager
Shirley Olinger, DOE-ORP Site Manager
Brandt Petrasek, DOE-HQ Tribal
Jill Conrad, DOE-RL Tribal Nations Program
Stuart Harris, CTUIR DOSE Manager
Russell Jim, Yakama ER/WM Director
Aaron Miles, DNR Manager
Samuel N. Penney, NPTEC Chairman

79-1

79-1 DOE extended the public comment period for another 45 days, for a total comment period of 185 days.

Commentor No. 80: Laurie Fleming

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 3/23/2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

I do not want to see new waste be transported and dumped at Hanford and anywhere else in our beautiful State of Washington until DOE does a thorough CLEAN up of the waste you have already done. *80-1*

Also, I understand that an earthquake could cause a disaster the size of Chernobyl. Nuclear waste dumped along a fault line is not acceptable. I request full disclosure of earthquake activity reporting from the past, as well as full reporting of future earthquake activity as each occurance happens via media reporting. *80-2*

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Laurie Fleming

Address/Dirección: 2207 S. Southeast Blvd. #3, Spokane, WA 99203

City, State, Zip Code/Ciudad, Estado, Zona Postal: _____

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

80-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

80-2 Chapter 3, Section 3.2.5.1.1, of this *TC & WM EIS* depicts and discusses the locations of geologic faults relative to Hanford and their potential for producing earthquakes. Section 3.2.5.1.4 discusses the historical seismicity of the Hanford region, including the frequency and magnitude of historic and recent earthquakes, and presents the most recent seismic risk estimates for Hanford. Most of the earthquake information is publicly available online and all cited references, which are listed in Section 3.4, are available upon request or at reference libraries (e.g., Hanford Public Reading Room). As described in Chapter 4, Sections 4.1, 4.2, and 4.3, of this EIS, DOE Order 420.1B and its implementing standards require that nuclear and nonnuclear facilities be designed, constructed, and operated to safeguard the facility, the public, workers, and the environment from natural phenomena hazards, including earthquakes. Consequently, impacts of earthquakes are evaluated for waste management and disposal facilities, tank farms, and the WTP. Information can be found in Sections 4.1.11 and 4.3.11. More-detailed information can be found in Appendix K.

Commentor No. 81: Marilyn Darilek

U. S. DEPARTMENT OF ENERGY

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/23/10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

I believe it is irresponsible to cap over tanks, landfills, dumpsite, and soils, etc. INSTEAD OF enforcing thorough & complete removal &/or containment utilizing best-science processes & methods. THE residents of WA. St. have made abundant sacrifice throughout previous decades by allowing Hanford to continue this heritage of pollution, deceit, disrespect for human health & public safety & environmental degradation.

81-1

Voters overwhelmingly rejected the directive to the federal policy makers to clean up their mess — especially prior to dumping additional nuclear & other contamination wastes. Clean closure is definitely better than closed entombment. It seems insane that this facility was located so near a major river in a known geologically active region — it's time to stop the influx of waste to Hanford! Keep the moratorium in place!

81-2

81-3

81-2 cont'd

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

Name/Nombre: Marilyn Darilek

Address/Dirección: 1814 W. Brimcliff Ln., Spo. WA. 99208

City, State, Zip Code/Ciudad, Estado, Zona Postal: _____

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

81-1 Comment noted.

81-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

81-3 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

The accident analysis in this *Final TC & WM EIS* includes accidents triggered by seismic events and discusses potential impacts on site workers and the general public (see Appendix K, Section K.3). For the groundwater analysis, no credit was taken during the analysis for long-term structural stability of the repository or of any of the waste-form containers.

Commentor No. 82: Brian Cladoosby, President, Norma Jean Louie, Secretary, Affiliated Tribes of Northwest Indians of the United States

2010 Winter Conference
Great Wolf Lodge, Grand Mound, WA

RESOLUTION #10 - 02

"TRIBAL INPUT FOR THE 2010 HANFORD CLEAN-UP ENVIRONMENTAL IMPACT STATEMENT"

PREAMBLE

We, the members of the Affiliated Tribes of Northwest Indians of the United States, invoking the divine blessing of the Creator upon our efforts and purposes, in order to preserve for ourselves and our descendants rights secured under Indian Treaties and benefits to which we are entitled under the laws and constitution of the United States and several states, to enlighten the public toward a better understanding of the Indian people, to preserve Indian cultural values, and otherwise promote the welfare of the Indian people, do hereby establish and submit the following resolution:

WHEREAS, the Affiliated Tribes of Northwest Indians (ATNI) are representatives of and advocates for national, regional, and specific tribal concerns; and

WHEREAS, ATNI is a regional organization comprised of American Indians in the states of Washington, Idaho, Oregon, Montana, Nevada, Northern California, and Alaska; and

WHEREAS, the health, safety, welfare, education, economic and employment opportunity, and preservation of cultural and natural resources are primary goals and objectives of ATNI; and

WHEREAS, the U.S. Department of Energy's (DOE) Hanford Nuclear Site, located in southeastern Washington along the Columbia River, contains chemical and radioactive waste that has contaminated our people and our water, air, and land; and

Response side of this page intentionally left blank.

Commentor No. 82 (cont'd): Brian Cladoosby, President, Norma Jean Louie, Secretary, Affiliated Tribes of Northwest Indians of the United States

AFFILIATED TRIBES OF NORTHWEST INDIANS **RESOLUTION #10 - 02**

WHEREAS, the health of the Columbia River and the salmon that spawn in the Hanford Reach are critical to the Indian People; and

WHEREAS, ATNI Member Tribes have invested countless hours and resources fighting to require a faster and more thorough cleanup of the Hanford Site while DOE has disposed of radioactive waste in 149 underground single-shelled tanks, among other places, and many tanks are leaking or have leaked radioactive waste which has in the past and currently is contaminating the groundwater, soil, and plants, and is leaching into the Columbia River; and

WHEREAS, DOE has released a Draft Tank Closure and Waste Management Environmental Impact Statement (EIS) that proposes alternative options on how thoroughly DOE will clean up the nuclear waste and whether to ship additional off-site nuclear waste to Hanford; and

WHEREAS, there is a limited time for influencing DOE's decision and sharing our concerns by the deadline on March 19, 2010 when DOE's decision will influence Tribal resources throughout the Columbia River Basin; and

WHEREAS, DOE is currently making decisions that will guide the cleanup of radioactive and chemical waste for the next fifty years that will affect human health, the environment, and tribal resources for many generations; for example, DOE is deciding whether to remove 90%, 99%, or 99.9% of the radioactive waste from 177 single-shell storage tanks, 67 of which are known or suspected "leakers." Radioactive waste is so long-lived that DOE projects that in the year 5000, 1:1,000 people who use Hanford (e.g. drink groundwater) will die of cancer if 90% of the tank waste is retrieved, and 1 in 100,000 will die of cancer if 99.9% of the tank waste is retrieved, therefore making today's decisions a very long-term impact; and

WHEREAS, DOE is also considering whether or not to clean up the contaminated soil and groundwater beneath the tanks and as part of this EIS, DOE has decided ***not*** to propose cleanup of large trenches that contain radioactive waste that DOE dumped for decades; and

WHEREAS, DOE's preferred alternative is to ship nuclear waste from across the nation to Hanford once the Waste Treatment Plant is operational making Hanford the nation's nuclear waste dump which will increase the exposure and cancer risks of Native Americans in the Pacific Northwest by transporting nuclear waste through Native American reservations on trucks and trains increasing risk of exposure; now

THEREFORE BE IT RESOLVED, that ATNI does hereby recommend that Hanford not be the nation's nuclear waste dump; and

BE IT FURTHER RESOLVED that ATNI recommends that DOE should reject any alternatives that propose shipping more waste to Hanford; and

82-1

82-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 82 (cont'd): Brian Cladoosby, President, Norma Jean Louie, Secretary, Affiliated Tribes of Northwest Indians of the United States

AFFILIATED TRIBES OF NORTHWEST INDIANS **RESOLUTION #10 - 02**

BE IT FURTHER RESOLVED that ATNI supports the principle of "cleanup first;" and *82-2*

BE IT FURTHER RESOLVED, that, when making decisions, the risk of exposure to Native Americans should be projected by the Tribes themselves, not DOE's exposure scenarios because Tribes are in the best position to judge the exposure of risk; and *82-3*

BE IT FURTHER RESOLVED, that ATNI demands the DOE choose the most aggressive plan possible to contain and treat radioactive and chemical wastes at Hanford with the goal of making the entire area safe for traditional uses; and

BE IT FURTHER RESOLVED, that ATNI demands DOE should remove and treat as much waste contained in the single-shelled tanks as possible with the goal of reaching 99.9%; and *82-4*

BE IT FURTHER RESOLVED, that ATNI demands DOE should immediately develop plans to clean up the million gallons of radioactive waste that has already leaked from the storage tanks and completely treat all of the leaked waste and evaluate and treat miles of unlined ditches and trenches containing nuclear waste that DOE currently has no plans to clean up; and *82-5*

BE IT FURTHER RESOLVED, that ATNI demands DOE should ensure that the Waste Treatment Plant create ultra-stable waste forms that are "good as glass," and DOE should reject all less stable treatment systems; and *82-6*

BE IT FINALLY RESOLVED, that ATNI demand DOE select cleanup plans that protect the health of all people today and for future generations.

CERTIFICATION

The foregoing resolution was adopted at the 2010 Winter Conference of the Affiliated Tribes of Northwest Indians, held at the Great Wolf Lodge, Grand Mound, Washington, February 8 - 11, 2010 with a quorum present.

Brian Cladoosby
Brian Cladoosby, President

Norma Jean Louie
Norma Jean Louie, Secretary

82-2 Comment noted.

82-3 The intent of the American Indian scenarios was to collectively reflect American Indian lifestyles for the purpose of comparison. It was never the intent to analyze all possible American Indian scenarios.

82-4 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

82-5 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present. Estimates of the total leak loss from the 67 SSTs range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons), some of which has reached the groundwater. DOE recognizes that groundwater contamination from past leaks is a concern at Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms by landfill closure, selective clean closure, or clean closure. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks, including remediation of the contamination in the vadose zone.

Since 2004, DOE has buried all LLW in lined trenches (see Appendix E, Section E.3.3, of this EIS for the evolution of past disposal practices). DOE continues to strictly limit the amount of waste that Hanford can accept and ensures that disposal activities are protective of the environment and meet regulatory requirements. Previous use of unlined trenches for disposal was a

Commentor No. 82 (cont'd): Brian Cladoosby, President, Norma Jean Louie, Secretary, Affiliated Tribes of Northwest Indians of the United States

big concern to stakeholders and Washington and Oregon States; DOE heard and addressed those concerns and is using lined trenches.

82-6 Vitrification of radioactive waste into glass is an attractive option because it atomistically bonds the species in a solid glassy matrix. Because radioactive constituents are bonded within the glass structure, the waste forms produced are very durable and environmentally stable over long time durations; however, they remain toxic. EPA has declared vitrification the best-demonstrated available technology for HLW disposal.

See response to comment 82-4 regarding future DOE decisions.

Commentor No. 83: H.T. Bernstein

TC &WM EIS
P.O. Bx 1178
Richmond, WA 99352

February 21, 2010

Dear Sirs,

It is not in the national interest to concentrate all radioactive dumping in one spot. Apart from the burden of guarding hazardous wastes for generations against not only terrorist activity but innocent civilian contact, a single location generates multiple and long transport routes for new waste. *83-1*

It is unfair to impose on the people of the State of Washington, especially those American Indian tribes and others who live in the vicinity of Hanford, the entire health risk of a single national dump. *83-2*

If the further development of nuclear electricity generation, in order to preclude the generation of carbon dioxide emissions, irrespective of higher costs and the dilemma of entombment guarded for thousand of years after end of useful life of plant, is so much in the national interest as to outweigh its disadvantages, the whole country ought to participate in the burdens of waste disposal, not dump them all on Hanford. and the people of Washington State.alone *83-3*

It is poor public policy to exaccerbate conditions in one place before cleaning up existing messes. Before adding further to radioactive hazards at Hanford, leaky barrels of waste should be removed from unlined trenches, transfer the remainder of high-level waste from leaking single walled containers to double ones, and above all prevent radioactive waste from contaminating the ground water that seeps into the Columbia River. This is a great American river affecting millions of people.Just one consequence of contamination would be to spoil the salmon fishery, which would spread out from the mouth of the Columbia along the west coast of America. *83-4*

It is in the national interest to clean up Hanford, not expand it as the radioactive dump for the entire United States. *83-5*

Sincerely,

H.T. Bernstein

H.T. Bernstein
3439 NW 62nd Street
Seattle, WA 98107

83-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections discuss the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

The commentor is also referred to Appendix H, Section H.7, for the results of the transportation risk analysis and Section H.6.6 for a discussion on potential acts of sabotage or terrorism.

83-2 This EIS addresses the environmental impacts of retrieval, treatment, and disposal of tank waste and final closure of the SST system. It also evaluates the impacts of FFTF decommissioning, including management of waste generated by the decommissioning process. Finally, this *TC & WM EIS* evaluates the potential environmental impacts of ongoing solid-waste management operations at Hanford, as well as the proposed disposal of Hanford LLW and MLLW and a limited volume of offsite LLW and MLLW.

See response to comment 83-1 for a discussion on the transport and disposal of offsite waste.

83-3 Nuclear energy production is not within the scope of this *TC & WM EIS*. Regarding the safe disposal of waste generated from nuclear energy production, the current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding

Commentor No. 83 (cont'd): H.T. Bernstein

management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

83-4 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

This *TC & WM EIS* provides a detailed description of the SST system in Appendix E, Section E.1.1.1.1, Tank Farm Facilities. SST activities under way include planning the sequence for transferring waste currently stored in the DSTs to the WTP and retrieving and transferring waste from the SSTs to the DST system for eventual treatment. Section E.1.1.1.1 describes the technologies, facilities, assumptions, and uncertainties associated with options for retrieval of waste from SSTs and transfer to DSTs. Contingency planning for potential additional tank leaks is discussed in Section E.1.1.1.2. This section provides some insight into Hanford's tank farm operations, maintenance, surveillance and monitoring, and safety programs that DOE has instituted to ensure that, if new tank leaks develop, they do not affect the environment.

83-5 See response to comment 83-1 for a discussion on the transport and disposal of offsite waste.

In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor Number 84 is not included in this Comment-Response Document because it is a duplicate of Commentor Number 73.

Commentor No. 85: Emma Amiad

From: Emma Amiad [eamiad@vashonislandrealestate.com]
Sent: Friday, February 26, 2010 5:54 PM
To: tc&wmeis@saic.com
Subject: Hanford

I would appreciate my comments being considered as you move forward at Hanford. I simply cannot believe there would be any further consideration of this site for toxic waste disposal. The Columbia river is vital for agriculture, drinking water, and wildlife in Washington state and must be protected. The ground water contamination alone is enough to keep us awake at night. Hanford should be cleaned up! But instead there is this plan to go back to dumping there. This must stop! *85-1* *85-2*

Emma Amiad

Vashon Island, Washington

85-1 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

All comments made during the public comment period, whether given orally at hearings or sent via mail or email, were considered equally by DOE. All comments received on the *Draft TC & WM EIS* and their approved responses are included in this CRD, a volume of this *Final TC & WM EIS*. DOE has posted this final EIS, including this CRD, on the Hanford website (http://www.hanford.gov) and on the DOE NEPA website (http://energy.gov/nepa), and a Notice of Availability will be published in the *Federal Register*. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

85-2 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 86: Tim Calvert

From: Tim Calvert [tcalvert@pcez.com]
Sent: Sunday, February 28, 2010 1:41 PM
To: tc&wmeis@saic.com
Subject: Clean up the poison at Hanford

The disaster that is Hanford is criminal. No more waste, clean it up, stop attacking the people of the Northwest. Sincerely Tim Calvert. *86-1*

86-1 Although not within the scope of this *TC & WM EIS*, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 87: Steve Shaiman

From: Steve Shaiman [steve@shaiman.net]
Sent: Sunday, February 28, 2010 5:53 PM
To: tc&wmeis@saic.com
Subject: Clean Up Hanford Before Expanding

If Hanford's role, serving as a dumping ground for radioactive waste must be expanded, the existing conditions must be addressed first. There is no going back later to clean it up. If this can't be done first, just dump the new waste directly in the Columbia and be done with it. The long-term results will be the same either way.

How can never cleaning up the million gallons of waste leaked from High-Level Nuclear Waste tanks be an option.

What about the unlined soil trenches filled with highly radioactive wastes?

Both are causing massive contamination to flow toward the Columbia River. *87-1*

Spending money for more dumping without first spending the money to deal with these problems, only promises even more problems to compound the existing conditions.

Unless the plan includes a plan to force evacuation and sealing off 100s, if not 1000s of square miles of land around Hanford and along the Columbia river, not cleaning up the existing conditions first makes no sense. *87-2*

Regards,

Steve Shaiman
4334 NE 43rd St
Seattle, WA 98105

87-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates. While this *TC & WM EIS* does not address remediation of contaminated groundwater, groundwater contamination resulting from past tank leaks is currently being evaluated under the RCRA Facility Investigation/Corrective Measures Study process. Disposal of LLW in unlined trenches within Hanford's LLBG 218-W-5 ceased in 2004, as described in Chapter 3, Section 3.2.12.1.4, of this EIS. Closure of these CERCLA past-practice units is outside the scope of this EIS. These LLBGs are included in a draft Remedial Investigation/Feasibility Study work plan that outlines possible characterization and remediation activities for specified landfills on the site. However, the contribution of past waste disposal in the burial grounds to contamination of the vadose zone and groundwater is included in the cumulative impacts analysis presented in Chapter 6 of this EIS.

Under the Waste Management alternatives evaluated in this *TC & WM EIS*, onsite-generated, non-CERCLA, nontank LLW and MLLW would continue to be disposed of in the "lined" trenches 31 and 34 in LLBG 218-W-5. As presented in Chapter 4, Section 4.3, and Chapter 5, Section 5.3, of this EIS and summarized in the Summary, the potential short-term impacts of disposal operations would be negligible, and the long-term groundwater and human health analyses indicate that it would be safe to continue disposal of LLW and MLLW in these "lined" trenches.

87-2 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 88: Edward Fredenburg, Washington State Department of Ecology

From: Fredenburg, Edward (ECY) [mailto:Efre461@ecy.wa.gov]
Sent: Wednesday, January 13, 2010 3:21 PM
To: Burandt, Mary E
Cc: Eberlein, Elis (ECY); Dahl-crumpler, Suzanne L; McDonald, Dan (ECY)
Subject: RE: errors in EIS

Another possible error:

Comparing chromium releases to VZ (Appendix M) vs. releases to GW (Appendix N) for the Waste Management alternatives, it generally appears that for tank closure alternatives 2B, 3A, 3B, and 3C the amount of chromium reaching groundwater is the same or slightly less than the amount released to the vadose zone. The one exception is for tank closure alternative 3B. Figure M-53 shows approximately 400,000 kg released to the vadose zone. Figure N-92 shows that only about 1/10 that amount reaches groundwater. Either there is an order or magnitude error somewhere, or the transport properties of chromium atoms in the vadose zone are somehow different if the source is cast stone vs. ILAW, bulk vit, or steam reforming product. *88-1*

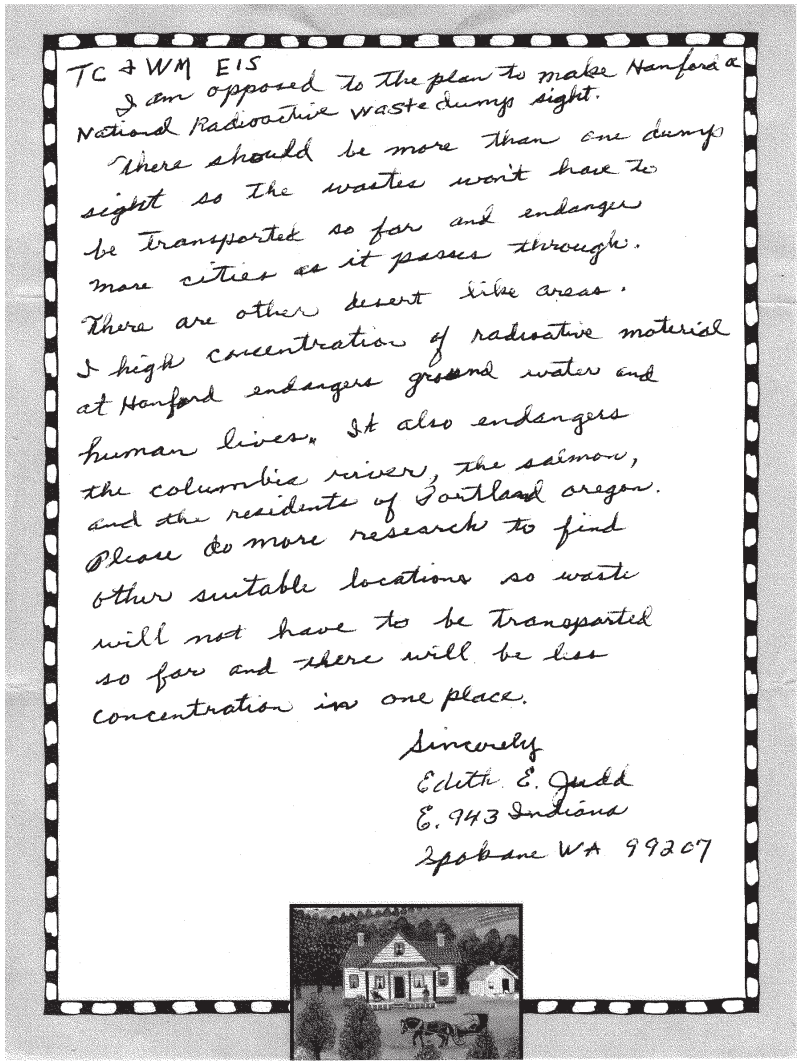
p.s. How is Charles doing on providing values for the bars in Appendix M and N? Elis Eberlein also needs the information. I'll be gone effectively by the end of today, so if you or Charles provide the requested values by email, please copy Elis on the email.

Thanks,

Ed

88-1 There was an error in the entry for chromium in Figure N–92 in the *Draft TC & WM EIS*. That error has been corrected in Figure N–133 of this *Final TC & WM EIS*.

Commentor No. 89: Edith E. Judd



TC & WM EIS
I am opposed to the plan to make Hanford a National Radioactive waste dump sight.
There should be more than one dump sight so the wastes won't have to be transported so far and endanger more cities as it passes through.
There are other desert like areas.
A high concentration of radioactive material at Hanford endangers ground water and human lives. It also endangers the columbia river, the salmon, and the residents of Portland oregon.
Please do more research to find other suitable locations so waste will not have to be transported so far and there will be less concentration in one place.

Sincerely
Edith E. Judd
E. 943 Indiana
Spokane WA 99207

89-1

89-2

89-1 cont'd

89-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

89-2 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 90: Janice Milani

February 23, 2010

Mary Beth Burandt, Document Manager
USDOE, Office of River Protection
P.O. Box 1178
Richland, WA 99352

Dear Ms. Burandt,

I am writing to you with three concerns about the aging Hanford nuclear plant--specifically, (1) cleanup from the leaking storage tanks, (2) wastes that have already leaked, and (3) the proposal to ship radioactive wastes from across the United States to Hanford.

I would like to say that I strongly oppose transporting any radioactive wastes across the country to Hanford, or for that matter, anywhere else. There is the strong possibility of spills or accidents during any phase of this, endangering peoples' lives through long-term soil and water contamination. No matter how careful humans are, there are always mistakes and accidents. Also, self-styled terrorists could try to hijack some of this material. There are mentally unstable people who would see this as an opportunity for whatever ends they have in mind. *90-1*

Also, I believe that all of the existing 55 million gallons of buried waste at Hanford need to be removed, with a 99.9% retrieval, and that the radioactive wastes that have already leaked from corroding holding tanks and are getting nearer and nearer to the Columbia River, should be cleaned up. *90-2*

I am sure you are aware that the Columbia River is one of the Northwest's major transportation highways, powers a series of dams, and is also a source of food to people who fish its waters. In addition, the Columbia is near drinking water wells that are used in summer by the city of Portland. And Portland is by far the largest urban area in Oregon, making the possibility of contamination able to affect a great many people. *90-1 cont'd*

In view of all these very real dangers, I hope you will use your influence to stop any transportation of nuclear wastes to Hanford and will recommend a thorough cleanup of all of the wastes.

Thank you very much for listening.

Sincerely,

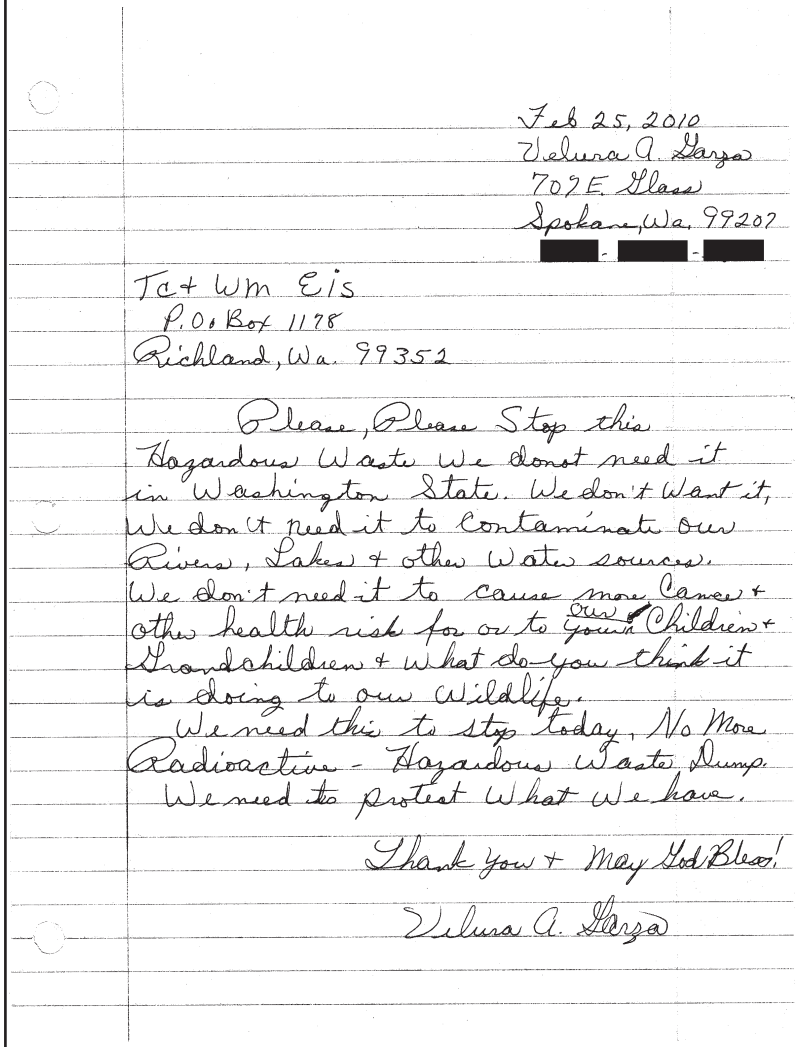
Janice Milani

Janice Milani
323 S.E. 55th Ave.
Portland, OR 97215

90-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

90-2 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Commentor No. 91: Velura A. Garza



Feb 25, 2010
Velura A. Garza
707 E. Glass
Spokane, Wa. 99207
[redacted]

Tc+ Wm Eis
P.O. Box 1178
Richland, Wa. 99352

Please, Please Stop this
Hazardous Waste We donot need it
in Washington State. We don't Want it,
We don't need it to Contaminate our
Rivers, Lakes + other Water sources.
We don't need it to cause more Cancer +
other health risk for our to Your Children +
Grandchildren + What do you think it
is doing to our Wildlife.
We need this to stop today, No More
Radioactive - Hazardous Waste Dump.
We need to protest What we have.

Thank you + May God Bless!

Velura A. Garza

91-1

91-1 The purpose of this *TC & WM EIS* is to analyze the potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites. In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 92: Jeff White

-------- Original Message --------
Subject: Hanford toxic waste
Date: Mon, 01 Mar 2010 15:22:54 -0800
From: Jeff White <JWhiteCIN@comcast.net>
To:TCY&WMEIS@saic.com

To: Mary Beth Burandt, NEPA Document Manager, U.S. Dept.of Energy,
Office of River Protection
ATTN: TC & WM EIS, POB 1178 Richland, WA 99352

I completely agree with the following proposition:

1. speed the clean-up of nuclear and toxic waste at Hanford that is contaminating the COLUMBIA RIVER - DON'T DELAY CLEAN-UP! *92-1*

2. prevent further offsite waste shipments to Hanford that would require moving toxic waste through Oregon highways. *92-2*

I understand that we have energy problems that will likely require a drastic change of lifestyle.
My family and I are willing to undergo hardship to avoid further damage and contamination
of the planet.
We choose to Protect the environment, and invest in our future.

Jeff White
2966 Norkenzie Rd.
Eugene, OR 97408

[redacted]

1 of 1 3/1/2010 4:03 PM

92-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

92-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 93: Arun N. Toké

From: Arun Toke [editor@SkippingStones.org]
Sent: Monday, March 01, 2010 8:07 PM
To: tc&wmeis@saic.com
Cc: office@hoanw.org
Subject: Hanford Waste Cleanup and its potential threat to our environment

RE: Tank Closure & Waste Management EIS Hearings

Dear DOE Officials

Greetings.

Since I am unable to come to the public hearing this evening, I wanted to send you my concerns and comments regarding Hanford for the record.

I would like to see a speedy clean-up of nuclear and toxic waste at Hanford that is contaminating the COLUMBIA RIVER - PLEASE DO NOT DELAY CLEAN-UP TASK!

Hanford is located too close to the Columbia River. How could you all have not taken in to consideration the future pollution that it will cause and impact on this site on the important waterway? For many years it produced plutonium for nuclear weapons, leaving major nuclear and chemical pollution, some of which is a possible long-term threat to the river. Every now and then I have read reports in the newspapers about leakages from Hanford. And, as a former electrical engineer, I feel that somehow, the siting and construction must have been flawed. *93-1*

I am surprised to learn that the DOE spends around $2 billion per year.

I hope you will advise the President to not invest in Nuclear energy until the waste issues are fully and satisfactorily resolved. *93-2*

Thank you for seeking our input.

arun
Arun N. Toké, Editor
Skipping Stones Magazine
P.O. Box 3939
Eugene, OR 97403 USA

TEL. xxx-xxx-xxxx

email: editor@SkippingStones.org
website: www.SkippingStones.org

Celebrating Our 22nd year!
WINNER, 2007 NAME AWARD

93-1 Possible long-term threats to the river are analyzed in Chapter 5 of this *TC & WM EIS*. The long-term impacts analysis results for groundwater, human health, and ecological risk were derived from modeling releases (including leakages) of waste to air and groundwater. These impacts were analyzed out to 10,000 years in the future.

93-2 One of the purposes of this *TC & WM EIS* is to analyze the range of reasonable alternatives to safely retrieve and treat radioactive, hazardous, and mixed waste from the Hanford tank systems; close the SST system; and store and/or dispose of the waste generated from these activities at Hanford. National policies addressing commercial nuclear power generation and management of associated wastes are beyond the scope of this EIS.

Commentor No. 94: Justin Pearce, City Council, City of Pendleton, Oregon

From: Pearce, Justin (Pendleton) [JustinPearce@chiwest.com]
Sent: Tuesday, March 02, 2010 8:27 PM
To: ken.niles@state.or.us; tc&wmeis@saic.com
Subject: More info on Draft Tank Closure & Waste Managment EIS

Ken,

I am trying to understand the entire situation as best as I can regarding the liquid waste from Hanford. What is clear is that its vicinity to a massive river system such as the Columbia has the potential to affect a very large area, ecologically and geographically. I would hope, despite the costs, that retrieving the tanks is the most likely option. Does that seem to be the consensus? What would we do with the waste then? *94-1*

With landfill closure of all the tanks, what does that entail?

I am less concerned about the FFTF but obviously, continued nuclear waste processing at this site concerns me, as states as a possibility after 2022. *94-2*

Do you have more information, in a pdf that I can read. What is the best solution in your opinion and what is likely to happen, if you were to guess? *94-3*

Thanks for your time,

Justin Pearce
City of Pendleton, City Council

Justin J. Pearce JD MBA
Practice Manager, St. Anthony Hospital, CHI
justinpearce@chiwest.com
xxx.xxx.xxxx

94-1 The purpose of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

94-2 DOE is convinced that processing the tank waste in the WTP is the best path forward for stabilizing this waste and reducing potential impacts on the environment. As with any treatment process, there are risks; however, DOE is working diligently to mitigate such risks while completing the mission. To be clear, FFTF is not currently processing nuclear waste and will not do so in the future.

94-3 DOE mailed copies of the *Draft TC & WM EIS* to all individuals who requested one. For those individuals who requested only a printed copy of the Summary, a CD that contained the complete draft EIS and a Reader's Guide was attached to the inside cover. Project information is also available to the public on Hanfords's website (http://www.hanford.gov). The commentor is referred to Chapter 2, Section 2.12, for a discussion of DOE's Preferred Alternatives for tank closure, FFTF decommissioning, and waste management. See response to comment 94-1 for information on the NEPA decisionmaking process.

Commentor No. 95: Marsie Martien

From: Marsie Martien [mmartien@gmail.com]
Sent: Tuesday, March 02, 2010 4:23 PM
To: tc&wmeis@saic.com
Subject: Hanford Waste Dump

Clean-up the Hanford site completely first before bringing more waste.

remove the tanks and clean the soil. DO NOT make Hanford a national nuclear dump site!

Marsie Martien
3001 SE Kelly St.
Portland, OR 97202

95-1

95-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 96: James Bruvold

From: Jim Bruvold [jbruvold@efn.org]
Sent: Thursday, February 25, 2010 3:59 PM
To: Mary Beth Burandt
Subject: Geologic Isolation of Tank Wastes

Mary Beth Burandt, Document Manager
Office of River Protection
U.S. Department of Energy
Environmental Management Division
Richland, WA 99352

Dear Ms. Burandt,

Is there someone in the ORP who would be interested in discussing with me an idea to geologically isolate radioactive pollution using fungal mycelium? Use fungus to sequester and bind pollution to soil particles, and thus reduce aquatic transport into the Columbia River. The idea is to inject cultured microfauna into the vadoze zone beneath the seeping waste tanks, where they will reproduce and continue to grow on their own. *96-1*

There is a red fungus growing on the concrete walls of the Chernobyl reactor building in an environment of 10,000 Rads/hr. Apparently they rely upon radioactive disintegration energy for their life source.
There very well may be similar fungus growing in the vadoze zone beneath the leaking tanks that could be extracted and cultivated in a heterogeneous environment and then re-injected without un-intended consequences to the groundwater table.

My proposal is to culture fungus in a composted medium using a process I have designed. This process converts and separates metals and plastics from compost derived from raw city garbage and wastewater treatment sludge, on a scale of hundreds of tons per day. The municipal wastes generated in the Tri-Cities area could be used to help clean up the Hanford Site over the next 30 to 40 years. A large class of fungi overcome the difficulties encountered in such environments by the method of translocation which results in the internal redistribution of nutrients within the fungal mycelium. There is strong experimental evidence that diffusion is the dominant mechanism for translocation in heterogeneous environments. Diffusion is vital for exploration, i.e. the expansion of the fungal network into the surrounding area.

96-1 As discussed in Chapter 2, Section 2.6, of this *TC & WM EIS*, a number of technologies, including in situ soil remediation, were considered but not selected for detailed analysis in this *TC & WM EIS*. In situ soil remediation technologies were not evaluated in detail because of the difficulties and uncertainties associated with placement of treatment zones and their performance verification. In situ treatment also generally requires long periods of time and presents concerns about uniformity of treatment because of the variability in soil and aquifer characteristics.

Commentor No. 96 (cont'd): James Bruvold

Environmental heterogeneity has a strong influence on growth and function according to researchers at University of Dundee, U.K.

Sequestering nuclear wastes with mycelium my show to be a viable, cost effective method for cleaning up a very difficult situation.

Thank you for your consideration.

Respectfully,

James Bruvold, PE
Consulting Engineer
Energy and Environmental Sciences, LLC
88059-5th Street #2, P.O.Box 578
Veneta, OR 97487-0578
xxx-xxx-xxxx
jbruvold@efn.org

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Commentor No. 97: Matt Switzer

From: matt switzer [mattiswitz@gmail.com]
Sent: Tuesday, March 02, 2010 7:02 AM
To: tc&wmeis@saic.com
Subject: 3/1/2010

.9%-

Writing is hardly the optimal tool for expressing passion and emotioninstead, it functions best as a medium for conveying logic. Yet either are sufficient reasons to care about or respond to one basic point of Truth: life on earth is under attack. Whether or not we have come to be desensitized to this fact does not justify poisoning the web of life or contributing to the death of countless human beings. To confront this recently discovered reality of suicidal proportion, new democratic devices are needed for constructing the solutions that will prove commensurate with the problems faced today.

The recognition that all life is Sacred should prompt us to reconsider the lethal direction in which we are headed. It has indeed surpassed mere importance to educate ourselves fully on the complexities of the system we despise, to stage powwows and teach-ins that disperse and decentralize completely this knowledge we have accumulated. Rather, there has become a fundamental barrier in our Collective Psyche preventing us from taking full responsibility to the extent we should commit ourselves in our opposition to inadequate initiatives and impact statements. We can no longer be asked to trust the outside control of those in sanctioned offices of authority to provide us with a lifestyle dignifying civilization, for it will always be shortchanged without personalized determination.

Revitalization, the need for Self-rule and indisputable sovereignty, is required to eliminate violations of accepted social norms, i.e. the Public Trust Doctrine. Unfortunately the public is still mostly ignorant to these issues despite living in an information age and therefore the reform of education and the rebuilding of justice systems will be critical components to alleviating the grievances prevalent in this system of bureaucratic insanity. A critical mass, a group of people coming together from different backgrounds with different theories must be orchestrated to produce a stable, responsive, capable, integrated resource management plan, legitimately concerned about our investment in the future. In describing how best to reconsider responses to issues bearing most significance for Native peoples, Charles Wilkinson offers, The best outcomes will be inspired by Indian people themselves and carried out by their own institutions. (Wilkinson 2005)

97-1	**97-1**	Comment noted.

Commentor No. 97 (cont'd): Matt Switzer

Will we seek to entomb our most callous mistakes of the past, repressing our historical traumas even as its toxicity seeps into our unconscious; or will we take the lesson of today, the urgency of Now, and apply it to the larger picture? We must teach each other by doing and being what is right, while including ourselves in a cross-generational commitment to the ideal of Ultimate good. But this radical assembly cannot merely be just for showpower must shift from institutions of hierarchy to the collaborative human effort oriented towards a common purpose, namely its own sustainability. We must let the children speak for themselves while aiding and enforcing their engagement with the natural world. If we can do but one single thing for those who have been and will continue to be most affected by these decisions of highest priority, it will be to believe that rage can and will in fact educate and motivate us to assess the risks and cure ourselves of the greatest war crimes perpetrated of all time. Only then can the potential power of our collective intellect save us from the destruction of unforeseen prejudice, constructing a vessel of cultural regeneration much like our ancestors who, together, fashioned the canoes that saved them from the rising waters of certain death:

97-1 cont'd

The canoe is a metaphor for community; in the canoe, as in any community, everyone must work togetherall facets of the contemporary canoe experienceplanning, building, fund-raising, travelingcombine to make our communities strong and vital in the old ways. (Neel 1995)

Wilkinson, Charles. (2005) Blood Struggle: The Rise of Modern Indian Nations. W.W. Norton & Co: New York

Neel, David. (1995) The Great Canoes: Reviving a Northwest Coast Tradition. University of Washington Press

Response side of this page intentionally left blank.

Comment Documents 98 through 109 are found in the Richland, Washington, and Boise, Idaho, public meeting transcripts. These transcripts can be found in the second book of this Comment-Response Document (all campaigns and public meeting transcripts).

Commentor No. 110: Amy Pincus Merwin

From: Amy Pincus Merwin [amy@informproductions.com]
Sent: Wednesday, March 03, 2010 8:57 PM
To: tc&wmeis@saic.com
Subject: Please, no more nuclear storage, dumping or transporting of nuclear or other toxic waste to Hanford

To whom it may concern,

I live in Eugene Oregon and have properties all over Oregon. My livelihood is based on the livability of Oregon. I have great concern that:

1. the transport of nuclear materials and waste along both the I5 and I84 and other highways are will attract a terrorist attack on these transports exposing the populations in WA and OR to nuclear radiation; *110-1*
2. the Columbia River will become further radioactive; *110-2*
3. a leak at Hanford will create radioactive pollution downwind; *110-3*
4. creating more nuclear waste with no methods, means or location to properly reduce its toxicity or permanently store it without risk to present and future generations is foolhardy, irresponsible and unlikely to result in any difference than the present status of the radioactive toxicity currently at Hanford. *110-1 cont'd*

Current health, environmental devastation and degradation and pollution issues at Hanford *should* be remedied *before* any other materials are introduced. And I believe no further nuclear or other toxins should ever be transported to or stored at Hanford. *110-4*

I believe that America's energy future lies not in the creation of new nuclear power plants, despite the Obama administration's recent decision, and instead in true renewable energy sources, such as wind, solar, small hydro, algae-based bio-fuels, tidal and wave power and others.

Please do not allow further and future transport and storage of nuclear materials and waste in the Northwest and specifically at Hanford. *110-1 cont'd*

Sincerely,

Amy
Amy Pincus Merwin
InForm Media and Property
2220 Sandy Drive
Eugene, OR 97401
cp xxx-xxx-xxxx
fx xxx-xxx-xxxx
amy@informproductions.com

110-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

110-2 One of the purposes of this *TC & WM EIS* is to analyze the range of reasonable alternatives to safely retrieve and treat radioactive, hazardous, and mixed waste from the tank systems; close the SST system; and store and/or dispose of the waste generated from these activities at Hanford. DOE acknowledges that long-term actions are required to permanently reduce the risk to human health and the environment posed by the waste in the tank systems.

110-3 Comment noted.

110-4 This *TC & WM EIS* addresses proposed actions to retrieve, treat, and dispose of Hanford tank waste; decommission FFTF; and expand waste disposal capacity at Hanford to provide for disposal of on- and offsite DOE waste. The generation of energy in the United States is beyond the scope of this EIS.

Commentor No. 111: Janice Snyder

From: Janice Snyder [janiceliza@hotmail.com]
Sent: Thursday, March 04, 2010 1:12 AM
To: tc&wmeis@saic.com

Mary Beth Burandt, Document Manager
U.S. Department of Energy, Office of River Protection
P.O. Box 1178, Richland,WA 99352
Fax: 888-785-2865; Email: TC&WMEIS@saic.com

Dear Ms. Burandt,

Please accept these comments on the draft EIS for the US DOE Tank Closure and Waste Management plan.

As a resident of one of the largest cities downriver from Hanford, the fate of radioactive and chemical waste products has a direct impact on me and my community. I am extremely concerned that existing reports have shown that so many of the buried storage tanks have been known to be leaking for so long. I don't understand how a nation with our scientific expertise and willingness to fully fund defense efforts appears unwilling to remedy this alarming situation. *111-1*

I urge the Department of Energy to incorporate the following steps into the final EIS before it is too late:

1. **Clean up all 53 million gallons of buried nuclear waste to 99.9% retrieval.** It seems clear that anything below 99.9% retrieval will lead to elevated drinking water levels of radioactivity. It is not acceptable to knowingly expose citizens to this risk. *111-2*

2. **Drop the proposal to ship radioactive waste from across the nation to Hanford.** DOE's "preferred alternative" is to ship radioactive waste from across the nation to Hanford after the Waste Treatment Plant is operating. No more waste should be shipped to the banks of the Columbia River, the lifeblood of the Pacific Northwest.

   The State of Washington said, "disposal of the proposed offsite waste would significantly increase groundwater impacts to beyond acceptable levels." DOE should exclusively focus on clean up in order to reduce the cancer risks and threats to fish and wildlife posed by existing pollution at Hanford. Because DOE is decades behind its legal schedule in cleaning up existing waste, the proposal to ship more waste to Hanford is beyond foolish. *111-3*

3. **Clean up the millions of gallons of nuclear waste that has already leaked and is reaching the Columbia.** DOE's proposal fails to address important soil and groundwater contamination. DOE should excavate and fully clean miles of ditches and trenches that contain *111-4*

111-1 Both DOE and Congress are committed to the cleanup efforts at Hanford, and DOE continues to seek funding for these efforts. As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

111-2 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

111-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections describe the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of

Commentor No. 111 (cont'd): Janice Snyder

waste. In addition, DOE should treat the soil and groundwater beneath the leaky storage tanks. Unchecked, plumes of this contamination are moving toward the river. Complete cleanup is necessary to protect salmon from long-lived radioactive and chemical waste. *111-4 cont'd*

Thank you for your time and attention to these comments,

Janice Snyder
Portland, OR

offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

Ecology's foreword to the draft EIS included its views and positions concerning DOE's analysis in the document and has been updated in this final EIS.

111-4 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 112: Gretchen Ellefson

From: Gretchen Ellefson [bellgre@gmail.com]
Sent: Thursday, March 11, 2010 1:02 PM
To: tc&wmeis@saic.com
Subject: Public Comment

I grew up in the Tri-Cities. My father worked at Hanford for years. When I was young, Hanford was just a part of life. Thats not to say that everyone in the Tri-Cities loves nuclear waste and hopes it will be in our water systems for millennia to come, but Hanford drives our economy and makes our area interesting. And for that, we appreciate it.

When I moved to Seattle in the fall of 2008, I found that the attitude of western Washingtonians isnt so different from those in eastern Washington when it comes to waste cleanup. The Tri-Cities may be more pro-nuclear power, but they are not, like some Seattleites seem to believe, pro-pollution and pro-waste. Everyone wants Hanford to be clean. Everyone wants a clean Columbia. So Im not quite sure why the Department of Energy doesnt plan on cleaning up the area as thoroughly as possible. And I dont quite understand how it could seem like a good idea to bring in more waste before Hanford is 100% clean. *112-1*

The Columbia River is hugely influential in the lives of native populations, as well as ecosystems in and around it, not to mention its influence of the livelihoods of thousands who live near the rivers shores. It doesnt make sense that anyone would look at this river and be resigned to the possibility that it could bring death rather than life to plants, animals, and humans who currently rely on it.

I understand it will be difficult. I understand it will be expensive. But which, in the long term, sounds worse: a little more work costing a little more money taking a little more time, or thousands of years of uninhabitable land? I can tell you what I would choose. I cant imagine the beautiful scenery that is the backdrop of so much of my childhood being unlivable, unavailable to future generations as the home it has been for me. *112-2*

112-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

112-2 Comment noted.

Commentor No. 113: Linnea Hirst

From: lwvquilter@comcast.net
Sent: Sunday, March 07, 2010 1:09 PM
To: tc&wmeis@saic.com
Subject: Hanford EIS

To the US Department of Energy
And to the Washington State Department of Ecology
Re: Hanford EIS document: Draft Tank Closure & Waste Management EIS

It is vital that the federal government continue—and accelerate—the thorough cleanup of the Hanford Nuclear Reservation in ways that protect the Columbia River and the people and all living creatures downstream from the Reservation.

We have laws, both federal and state, that must be met in order to protect the environment and the people who live and work in the areas affected by leaking radioactive and chemical wastes. Those wastes cannot be ignored and left to contaminate the land, the groundwater and sooner or later, the Columbia. *113-1*

It is time—beyond time—to pay attention to the generations that will follow us and to leave them an earth that at least is no worse than when we arrived here.

Thank you,

Linnea Hirst
1602 E. McGraw Street
Seattle WA

113-1 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Commentor No. 114: Ken Niles, Assistant Director, Oregon Department of Energy

From: Ken Niles [mailto:ken.niles@state.or.us]
Sent: Wednesday, January 27, 2010 2:33 PM
To: Borak, David
Cc: Hedges, Jane; Jpri461@ECY.WA.GOV
Subject: February 2000 ROD related to disposal of LLW and MLLW

Dave,

As we discussed on the phone, I would appreciate knowing how to initiate a review of the February 25, 2000 Record of Decision that selected Hanford and the Nevada Test Site as "regional" disposal sites for low-level and mixed low-level waste from throughout the DOE complex.

That ROD was based on a programmatic Environmental Impact Statement that did not assess site-specific impacts of that action. That site specific analysis has now been completed, and a draft EIS, the Tank Closure and Waste Management EIS (TC & WM EIS), was released by Hanford late last year. The site-specific analysis shows significant long-term impacts to the Hanford groundwater from the disposal of off-site waste at Hanford, especially if it contains long-lived mobile radionuclides, such as Technetium 99 and Iodine 129.

Even though there is a moratorium in place on receipt of off-site wastes that will extend through 2022, DOE's has previously made it quite clear that it does intend to bring off-site waste to Hanford once that moratorium is no longer in effect. Given the findings in the draft TC&WM EIS, it is clear that the ROD issued in February 2000 designating Hanford for receipt of off-site waste must be amended to withdraw Hanford from that decision.

By doing so, it will allow DOE to move forward with planning for more appropriate disposal of waste streams that will still be in need of a disposal path beyond 2022. It will also allow for a very contentious issue at Hanford to be put to rest once and for all.

Thanks.

Ken Niles
Assistant Director
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3742
503-378-4906
503-884-3905 - cell
503-378-6457 - fax
ken.niles@state.or.us

114-1

114-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 115: Lucy E. Schneid

From: jlschneid@comcast.net
Sent: Monday, March 08, 2010 1:33 PM
To: tc&wmeis@saic.com
Subject: Hanford Cleanup

Dear Mary Beth Burandt, Document Manager, Office of River Protection

Regarding the Department of Energy's decision to quit treating radioactive waste at Hanford and possible sending additional waste to the site, I need to inform you this is a bad idea. It is a long slog, but Hanford needs to be cleaned up. We cannot leave a nightmare for our children and future generations. We cannot drop the ball here. That is unacceptable. I, like Senator Ron Wyden, am dissatisfied with the cleanup progress, and "I am absolutely opposed to DOE bringing more waste" to this place. Keep the Columbia River a radioactive-free zone forever. This cannot be done without finishing the cleanup job and sealing it from further waste. *115-1* *115-2*

Respectfully yours,

Mrs. Lucy E. Schneid
2334 NE 47th Avenue
Portland, OR 97213

115-1 DOE continues to manage both radioactive waste and MLLW (waste that consists of both radioactive and hazardous components) at Hanford, including processing and/or treating these wastes in accordance with applicable statutory and regulatory requirements. The TPA, negotiated and signed by DOE, EPA, and Ecology in 1989, established Hanford cleanup priorities, actions, and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

115-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 116: Lucy Garrick

From: Lucy Garrick [lgarrick098@gmail.com]
Sent: Sunday, March 07, 2010 2:17 PM
To: tc&wmeis@saic.com
Subject: PUBLIC COMMENT ON THE DRAFT TANK CLOSURE & WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

PUBLIC COMMENT ON THE DRAFT TANK CLOSURE & WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

Humans do not mix well with radio active waste and chemical toxins. Neither to plants and animals. As a mother, grandmother and resident of Washington State, I am concerned about the plume maps in the DOE report on the Handford site that show toxins migrating into the ground water and into the Columbia River over time. Once these toxins go into the the river there will be no way to contain them. They will eventually be absorbed into plants which are eaten by fish, which are eaten by mammals and birds. *116-1*

The US DOE needs to use every resource at their disposal to correct this problem by

1) complying with existing laws that regulate the disposal of nuclear waste,
2) not dumping additional waste at the Hanford site from elsewhere,
3) limiting wastes at Hanford to those that won't cause future leakage and migration, and
4) digging up wastes in unlined soil disposal ditches and tank leaks and disposing them in a way that prevents them from spreading or harming the the environment and living things. *116-2*

Lucy Garrick
4119 E Edgewater Pl. G178
Seattle, WA 98112

116-1 In general, the scope of this *TC & WM EIS* does not include (nor will the potential NEPA ROD) groundwater remediation activity as part of the proposed actions evaluated. DOE recognizes that groundwater contamination is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

116-2 Responses to each of the commentor's concerns are as follows:

(1) DOE must comply with certain legal requirements to undertake specific activities that are part of the proposed actions and alternatives; these requirements are identified throughout this EIS. For example, Chapter 1, Section 1.2, discusses Hanford regulatory compliance requirements and the WAC regulations DOE must meet for the proposed closure of the SSTs. Section 1.9, which describes the alternatives evaluated in this EIS, refers to the RCRA, WAC, and DOE order requirements that must be met for DOE to implement Tank Closure alternatives. The very nature of "environmental impacts analysis" requires DOE to analyze and describe in this EIS how proposed processes and technologies would operate; what results they are expected to achieve; what end products or byproducts might result; and how these measure up against the legal requirements that apply. Statutory, regulatory, Executive order, and DOE requirements are discussed in the context of each chapter and are listed in the references at the end of each chapter. Chapter 8 identifies and discusses the laws and legal requirements that are potentially applicable to the proposed actions and alternatives, as well as the permits and approvals DOE must obtain from Federal, state, and local agencies. In Chapter 8, Sections 8.1.7 and 8.3, DOE identifies the consultations and coordination that DOE has undertaken with American Indian tribes and that would need to continue for the purpose of implementing the proposed actions and alternatives.

(2) Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with

Commentor No. 116 (cont'd): Lucy Garrick

some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections describe the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

(3) and (4) Since 2004, DOE has buried all LLW in lined trenches. DOE continues to strictly limit the amount of waste Hanford can accept and ensures that disposal activities are protective of the environment and meet regulatory requirements. Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 117: Mary Allison

From: Mary Allison [maryallison17@comcast.net]
Sent: Sunday, March 07, 2010 7:01 PM
To: tc&wmeis@saic.com
Subject: Hanford needs a clean-up not a cover-up

I am writing you on behalf of myself and my family to request that you take the necessary action to insure the following:

- Removal of 99.9% of tank wastes currently at the Hanford Reach facility; *117-1*
- Take an unyielding "clean closure" stance to remove all tanks and investigate and remediate the soil contaminations from tank leaks; *117-1*
- Maintain the standard established by Oregon for the Trojan nuclear reactor and treat the waste at Hanford. Do not put radioactive waste on our roads to harm that WILL HARM our adult citizens AS WELL AS our children and seniors. *117-2*
- Discard the "supplemental treatment" options and start up the LAW vitrification portion of the WTP prior to 2019 and start funding a second LAW facility in 2012 in order to have it ready by 2022. *117-3*
- DO NOT ADD MORE WASTE TO HANFORD. I implore you to say no to making Hanford a national radioactive waste dump site. *117-4*
- Dig up Plutonium and other Transuranic wasted in unlined soil disposal ditches and tank leaks, treat the wastes and dispose of them in deep geological repositories. *117-5*

Be the steward that you must be to insure the health of our families and planet.

Mary Allison
xxx-xxx-xxxx

117-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

117-2 Chapter 8 of this *TC & WM EIS* identifies the laws, regulations, and other requirements that potentially apply to the alternatives. Specifically, Section 8.1.4 identifies and summarizes the hazardous waste and materials management requirements. This section also discusses the treatment standards and transportation requirements for both hazardous and radioactive materials and waste. Radioactive waste and materials are transported in DOT-certified containers that meet strenuous technical standards established by NRC.

117-3 This EIS analyzed supplemental LAW treatment capability by building new treatment facilities that are either part of (expanded LAW capacity) or separate (bulk vitrification, steam reforming, or cast stone) from the WTP. As discussed in Chapter 2, Section 2.12, DOE does not have a preferred alternative regarding supplemental treatment for LAW. DOE believes it is beneficial to study further the potential cost, safety, and environmental performance of supplemental treatment technologies. DOE is committed to meeting its obligations under the TPA regarding supplemental treatment for LAW.

Appendix E, Section E.1.3.3.1, discusses the DOE Technology Readiness Assessment that included Business Case No. 7 (LAW First and Bulk Vitrification with Tank Farm Pretreatment), i.e., early startup of the LAW treatment process. However, at the time of the *Draft TC & WM EIS* preparation, DOE had not made a decision on whether to support implementation of this business case. Since then, DOE has commissioned an external technical review of the system planning for alternative supplemental treatment of LAW at Hanford (Kosson et al. 2008). The report (Kosson et al. 2008) from this review concluded that, although the current schedule for completion of the WTP LAW Vitrification Facility and supporting facilities could support early treatment of LAW in 2014, such early startup would require an interim pretreatment capability and the means

Commentor No. 117 (cont'd): Mary Allison

for disposition of secondary waste. Since 2008, DOE has been evaluating the transition of the WTP from construction to commissioning. Information on this strategy is provided in Appendix E, Section E.1.3.3.2, of this *Final TC & WM EIS*. The *2020 Vision* (WRPS and BNI 2011) evaluates some of the elements identified in earlier DOE reports, but focuses on commissioning of the WTP project and activities essential to starting up the LAW Vitrification Facility, the Analytical Laboratory, and the BOF, as well as the Pretreatment Facility and the HLW Vitrification Facility. For more information regarding the *2020 Vision,* please see Appendix E, Section E.1.3.3.2.

117-4 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

117-5 Treatment and disposal of the tank waste is evaluated in this EIS. However, the removal of waste in unlined disposal ditches and stored TRU waste at Hanford is not within the scope of this *TC & WM EIS* and, therefore, is not analyzed in this EIS. As described in the Summary and Chapter 1, Section 1.4.2, Decisions Not to Be Made, these wastes are part of the CERCLA past-practice units and closure of these units would be addressed at a later date consistent with the TPA process, which includes consideration of NEPA values.

The current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

Commentor No. 118: Tom Pickens

From: Tom Pickens [tsrland@yahoo.com]
Sent: Sunday, March 07, 2010 7:59 PM
To: tc&wmeis@saic.com
Subject: Opposing Hanford site dumping

As a grandfather and father of residents in Washington State, I am concerned about the plume maps in the DOE report on the Hanford site that show toxins migrating into the ground water and into the Columbia River over time. Once these toxins go into the river there will be no way to contain them. They will eventually be absorbed into plants, which are eaten by fish, which are eaten by mammals and birds. *118-1*

The US DOE needs to use every resource at their disposal to correct this problem by

1) complying with existing laws that regulate the disposal of nuclear waste,
2) not dumping additional waste at the Hanford site from elsewhere,
3) limiting wastes at Hanford to those that won't cause future leakage and migration, and
4) digging up wastes in unlined soil disposal ditches and tank leaks and disposing them in a way that prevents them from spreading or harming the environment and living things. *118-2*

Thank you for listening,

Tom Pickens
Danville, CA

118-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

118-2 The very nature of "environmental impacts analysis" requires DOE to analyze and describe in this EIS how proposed processes and technologies would operate; what results they are expected to achieve; what end products or byproducts might result; and how these measure up against the legal requirements that apply. Statutory, regulatory, Executive order, and DOE requirements are discussed in the context of each chapter and are listed in the references at the end of each chapter. Chapter 8 identifies and discusses the laws and legal requirements that are potentially applicable to the proposed actions and alternatives, as well as the permits and approvals DOE must obtain from Federal, state, and local agencies.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

Commentor No. 119: Mike Conlan

From: Mike Conlan [mikeconlan@hotmail.com]
Sent: Monday, March 08, 2010 2:32 PM
To: tc&wmeis@saic.com
Subject: Comment on Tank Closure & Waste Management Environmental Impact Statement

USDOE:

1) dismantle the FFTF reactor, *119-1*
2) cleanup ALL the tank waste,
3) "clean closure" for all tanks and soils,
4) startup the vitrification as soon as possible, *119-2*
5) no more waste added to Hanford! - a nuclear waste dump within throwing distance of the Columbia River!! *119-3*

USDOE seems more interested in NOT doing the needed cleanup! It is like our disabled vets - easily forgotten - after the fact.

Mike Conlan
6421 139th Place NE, #52
Redmond WA
98052-4588

119-1 DOE issued a ROD (66 FR 7877; January 26, 2001) for the *NI PEIS* (DOE 2000a) wherein DOE announced its decision that FFTF would be permanently deactivated.

The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 6A and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all of the SST system, effectively removing 100 percent of the waste. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

119-2 As discussed in the *TC & WM EIS* Summary, Chapter 1, and Chapter 2, this EIS analyzes additional waste treatment capability that includes expanding the vitrification process capability currently being constructed in the WTP or supplementing the WTP's capability with supplemental treatment technologies. Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies.

119-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 120: Kristen McNall

From: Kristen McNall [kmcnall@gmail.com]
Sent: Monday, March 08, 2010 5:57 PM
To: tc&wmeis@saic.com
Subject: Clean Up Hanford for Future Generations

Hello,

I have chosen Mosier as my home. The Columbia River is a vital part of our community, both for commerce and for recreation. Were the Columbia to become unusable, our community would suffer, and quite possibly cease to exist. I urge you to clean up Hanford to the best of our abilities to ensure the health of the river for future generations. The goal should be to empty the tanks to the 99.9% or better level, and to address the other sources of contamination rather than just burying them and hoping they won't cause trouble later. Hope can not be our sole strategy for protecting our homeland. *120-1*

Sincerely,

Kristen McNall
Mosier, Oregon

120-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Commentor No. 121: Linda Densmore

From: Linda Densmore [densmore@eoni.com]
Sent: Tuesday, March 09, 2010 4:51 PM
To: tc&wmeis@saic.com
Subject: Transportation of nuclear waste to Hanford is a bad idea

Hello- I have lived in La Grande, Oregon for 16 1/2 years and can't believe with all the problems Hanford is having to clean up the nuclear waste that you are willing to bring more there. We also have a home in Hood River and my husband loves to wind surf in the summers. Our kids join and we hope their kids (eventually) will someday too. But they already have a syndrome there I beleive it is called the "sick sinus syndrome" where people who windsurf there end up with a chronic stuffy nose and sometimes sinus infections. When my husband wind surfs other places this doesn't happen. Also La Grande is along hwy 84 and we live in between two of the worst snow passes in the whole U.S. We've already had one spill and we feel we should have a say. There are many families who i visit as a visiting nurse who live right near the freeway. Plus the Tri-Cities area has grown so much over the years...don't you think you should go someplace where there are no people and not a huge source of water that you could further contaminate and interfer with life connected to that river? Please clean up the nuclear waste that is there and then don't bring anymore there. *121-1*

Linda Densmore
7 Pine Crest Drive
La Grande, Oregon
97850
xxx-xxx-xxxx

121-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 122: John Whisler

From: John Whisler [john.whisler@seattlebiomed.org]
Sent: Tuesday, March 09, 2010 5:59 PM
To: 'TC&WMEIS@saic.com'
Subject: clean up

Please clean up the nuclear waste at Hanford now. *122-1*

Thank you

John Whisler

122-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 123: Karen McMichael

From: Lisa Van Dyk [lisa@hoanw.org]
Sent: Tuesday, March 09, 2010 7:32 PM
To: tc&wmeis@saic.com
Subject: Fw: Please forward comments

----- Original Message -----

From: Karen McMichael
To: lisa@hoanw.org
Sent: Tuesday, March 09, 2010 4:40 PM
Subject: Please forward comments

Thanks in advance for forwarding.

Karen:

****

I am deeply concerned about the pending decision to disallow waste materials going to Yucca Mountain. It seems only a matter of time until the waste materials begin leaching into the Columbia river, at which time a crisis would be called and the damage already done. *123-1*

Money has been spent and wasted in the sixty plus years since the Manhattan Project in storing waste. **Please push the Energy Department and our elected officials to honor the commitment made over time to clean up the waste at Hanford! It is dishonorable to current and future generations to perpetuate the health and environmental hazard the waste represents.** *123-2*

Thank you, Karen McMichael,

Karen McMichael 13840 18th Ave. Sw Burien, WA 98166 xxx-xxx-xxxx Home xxx-xxx-xxxx Cell kmcmich@msn.com

123-1 The current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

This EIS does analyze short-term (minimally 49 years and up to 245 years, depending on the alternative) interim storage of IHLW glass and HLW melters; their storage is predicted to result in no additional risk or environmental hazard to the Hanford area or community. This is because the HLW and HLW melters taken out of service are extremely robust waste forms. In addition, the HLW and selected tank closure debris would be stored in robust interim-storage containers (stainless steel canisters and shielded storage boxes), all of which would be stored in covered, weather-protected facilities until their final disposition path is chosen. Any changes to the disposition path described and analyzed in this *TC & WM EIS* would be subject to appropriate NEPA review.

123-2 Both DOE and Congress are committed to the cleanup efforts at Hanford, and DOE continues to seek funding for these efforts. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. Negotiations among the TPA agencies resulted in an agreement to make changes to the TPA that (1) reflect the shared priorities of the agencies, tribal nations, stakeholders, and the public to protect the Columbia River by cleaning up the soils and groundwater along the river corridor, and (2) adjust cleanup schedules to focus currently anticipated funds on near-term, higher-priority milestones by delaying cleanup work identified by the agencies as lower priority at this time.

Commentor No. 124: Madya Panfilio

From: Madya [madyapan@yahoo.com]
Sent: Tuesday, March 09, 2010 7:55 PM
To: tc&wmeis@saic.com
Subject: Comments of a Citizen

Just what is it going to take for the citizens of the Northwest to have safe water, if the government agencies that are to protect us completely ignore the urgency of the clean-up of Hanford Waste? Where is the Spirit of America? We must have agencies that want to move forward with the most expedient cleanup.

We need the Disposal of Radioactive & Hazardous Waste to be disposed into lined trenches. *124-1*

Hanford agencies have been given Billions of dollars for clean-up by the citizens of the United States of America. These citizens expect these funds to be used effectively and wisely…..not squandered on frivolous experiments. *124-2*

To abandon the contamination which leaked from the High-Level Nuclear Waste Tanks would be criminal because it is shown to be spreading rapidly towards the Columbia River. *124-3*

I want to see the closure of the SST system and absolutely NO transporting of waste along our highways. *124-4*

Madya Panfilio
Vancouver, WA

124-1 Since 2004, DOE has buried all LLW in lined trenches (see Appendix E, Section E.3.3, for the evolution of past disposal practices). DOE continues to strictly limit the amount of waste Hanford can accept and ensures that disposal activities are protective of the environment and meet regulatory requirements. Previous use of unlined trenches for disposal was a big concern to stakeholders and Washington and Oregon States; DOE heard and addressed those concerns and is using lined trenches.

124-2 The usage of taxpayer dollars in the cleanup of Hanford is beyond the scope of this *TC & WM EIS*.

124-3 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

124-4 This *TC & WM EIS* addresses proposed actions to retrieve and treat the Hanford tank waste; close the Hanford SST system; store and/or dispose of the waste generated from these tank waste activities; decommission FFTF; and expand or upgrade waste management capabilities to support ongoing and planned waste management activities for on- and offsite waste to facilitate cleanup at Hanford and other DOE sites.

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 125: Gerson Robboy

From: Gerson Robboy [uncleyascha@gmail.com]
Sent: Wednesday, March 10, 2010 1:04 AM
To: tc&wmeis@saic.com
Subject: Comment on DOE plans for Hanford

The contamination at Hanford is already a disaster unprecedented in history. If we do not clean up or permanently contain the contamination, we not only hand a huge problem down to our own descendents, but to any possible future civilizations in this area. The existing DOE preferred options are not merely negligent, but criminal. *125-1*

The tank farms must be closed, the soil trenches must be cleaned up or contained, the ground water must be isolated from the Columbia River, regardless of the cost. We must not dump any more waste at Hanford.

Gerson Robboy
uncleyascha@gmail.com
909 NE Brazee St., #11
Portland, OR 97212

125-1 Cleanup of Hanford is a major goal of implementing the Preferred Alternatives presented in this *TC & WM EIS*. The commentor is referred to Chapter 2, Section 2.12, for a discussion of the Preferred Alternatives for tank closure, FFTF decommissioning, and waste management. While implementation of the Preferred Alternatives would go a long way toward achieving cleanup of the site, not all actions related to cleanup are addressed in this *TC & WM EIS*. As stated in Chapter 1, Section 1.4.2, of this EIS, the groundwater contamination in the non-tank-farm areas within the 200 Areas (including the burial grounds, cribs, and trenches [ditches]) is being addressed under CERCLA, which will also satisfy substantive RCRA and Washington State Hazardous Waste Management Act corrective action requirements. Contamination in the vadose zone resulting from tank farm past leaks will be addressed in the SST closure process. The cumulative impacts analysis for this *TC & WM EIS* (see Appendix U and Chapter 6) includes the vadose zone of the 200 Areas in addition to the other areas of Hanford.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 126: Eric Adman

From: Eric Adman [ericladman@gmail.com]
Sent: Wednesday, March 10, 2010 10:30 AM
To: tc&wmeis@saic.com
Subject: Comments on Hanford Draft Tank Closure and Waste Management Environmental Impact Statement

To whom it may concern - I have the following comments with regard to this document and plan:

I do not support storing more radioactive waste on the Hanford site. Storage and contamination issues with existing waste have yet to be adequately resolved. Waste which is currently stored on site should be stabilized and removed to a more stable deep geologic repository. *126-1*

I do support removing 99.9% of high-level waste from the single-shell tanks, the tanks themselves, and the remediating the contaminated soils. *126-2*

I support vitrification of all of the Low Activity Waste and removal to a deep geologic repository, and increasing vitrification capability to allow this to happen in a shorter time period. *126-3*

Thank you for your attention.

Eric Adman
7815 NE 192 St
Kenmore, WA 98028

126-1 The draft EIS assumed that the IHLW canisters would not be shipped immediately after the IHLW generation. Storage capacity for the IHLW canisters was analyzed as part of the short-term impacts analysis for onsite IHLW interim storage.

Regarding the commentor's concern about the disposition of HLW, the current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

126-2 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. Tank Closure Alternatives 6A and 6B evaluate 99.9 percent retrieval of the tank waste and clean closure of the SST system. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

126-3 As discussed in the Summary, this *TC & WM EIS* analyzes additional waste treatment capability, including expanding the vitrification process capability currently being constructed in the WTP (i.e., constructing a second vitrification plant or supplementing the WTP's capability with supplemental treatment technologies). Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies.

See response to comment 126-1 for a discussion of Hanford waste disposal options.

Commentor No. 127: T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

From: Steele, Jeffrey M CIV SEA 08 NR [jeffrey.m.steele@navy.mil]
Sent: Wednesday, March 10, 2010 10:38 AM
To: mary_e_burandt@orp.doe.gov
Cc: tc&wmeis@saic.com
Subject: TC&WMEIS Comment Letter
Attachments: TC-WM Comment Letter.pdf

Ms. Burandt,

Attached is a pdf copy of the Navy comment letter on the TC&WM Draft EIS. It is coming through the regular mail, but I thought I would back up the Post Office by emailing a pdf copy. Thank you.

Jeff Steele
Naval Sea Systems Command
xxx-xxx-xxxx

Response side of this page intentionally left blank.

Commentor No. 127 (cont'd): T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
WASHINGTON NAVY YARD DC 20376-0001

08R:JMS:jms
Ser 08R/10-00897
March 5, 2010

Ms. Mary Beth Burandt
Document Manager, TC&WM EIS
DOE Office of River Protection
P.O. Box 1178
Richland WA 99352

This letter provides comments from the Naval Nuclear Propulsion Program on the Draft Environmental Impact Statement on Tank Closure and Waste Management (TC&WM).

In accordance with the Low Level Radioactive Waste Policy Amendments Act of 1985, consistent with two previous Navy Environmental Impact Statements that were both adopted by DOE, and as agreed to by the State of Washington in the *State of Washington v. Bodman* Settlement Agreement, defueled reactor compartments from decommissioned Navy nuclear-powered ships are transported to Hanford for disposal. Reactor compartment disposal is not considered within the scope of the alternatives considered by this Draft EIS, but rather is treated as a separate ongoing action for which the cumulative impacts are evaluated. The enclosed comments are provided to improve the accuracy of the cumulative impact analysis as it pertains to reactor compartment disposal.

The analysis in the Draft TC&WM EIS, in conjunction with the two Navy EISs, clearly demonstrates that Navy reactor compartment disposal at Hanford results in a negligible contribution to long-term Hanford groundwater impacts. The two radionuclides that are most significant in the TC&WM EIS analysis are the long-lived and mobile radionuclides Tc-99 and I-129. The total inventories of Tc-99 and I-129 in all of the Navy reactor compartments are very small - approximately 2.8 curies and less than 0.001 curie respectively. The amounts of these nuclides analyzed in the TC&WM EIS from several other sources, including Hanford tank waste sources, on-site and off-site waste sources, and previous releases to the Hanford environment, exceed the Navy contribution by several orders of magnitude.

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Commentor No. 127 (cont'd): T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

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As demonstrated in the Navy 1996 EIS, the release of these small amounts of long-lived radioactivity from the Navy reactor compartments is very slow, since first the thick reactor compartment hull and packaging must corrode, and then the very slow process of corrosion of highly corrosion-resistant metals must occur. The Navy 1996 EIS analysis calculated that the peak impacts would be very small and well beyond 10,000 years. The TC&WM EIS calculates maximum groundwater impacts within the 10,000 year period, even for waste disposed of in the lined trench of the Hanford Integrated Disposal Facility. This analysis confirms the reasoning behind the lined trench exemption request for Trench 94. The containment provided by the reactor compartments and the inherent containment provided by the metal matrix of corrosion resistant metals result in better long-term environmental protection than a lined trench.

Thank you for the opportunity to review this Draft EIS. The Navy appreciates the assistance of the Department of Energy and the State of Washington in the continued shipment of defueled reactor compartment packages to Hanford.

By direction
T. J. Mueller
Naval Nuclear Propulsion Program

Enclosure: Comments on the TC&WM Draft EIS

Copy to:
M. Collins, DOE-RL
C. Gelles, DOE EM-43
G. Robertson, WDOH

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Commentor No. 127 (cont'd): T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

Ser 08R/10-00897

Comments on the TC&WM Draft EIS

1. Summary: The Summary and Chapter 1 of the Draft EIS never clearly state whether or not the Navy reactor compartment disposal is within the scope of the proposed action and alternatives for this EIS. In Chapter 6 (Cumulative Impacts) and in Appendix S (Waste Inventories for Cumulative Impact Analysis), the Draft EIS makes it clear that Navy reactor compartment disposal is not within the scope of this EIS, but rather is evaluated along with other past and future actions as part of the cumulative impact analysis. A similar clear statement is needed in the Summary and Chapter 1. *127-1*

2. Chapter 1, Section 1.8: This section lists other past and current NEPA reviews and their relation to the TC&WM EIS. The Navy's 1984 EIS on defueled reactor compartment disposal is listed in this section, but not the 1996 EIS on the same subject that expanded the evaluation to newer ship classes. In addition, the relationship of these EISs to the TC&WM EIS is not discussed. This would be a good location to note that reactor compartment disposal is not within the scope of the TC&WM EIS, but is evaluated in the cumulative impact analysis. *127-2*

3. Chapter 6: On page 6-25, Navy reactor compartment disposal is listed as contributing 1505 person-rem to Hanford Involved Workers. The Navy 1996 EIS does list an estimated occupational dose of 1508 person-rem, but this dose is received by Navy shipyard personnel and not Hanford workers. This should be corrected. *127-3*

4. Appendix S: This appendix lists the waste inventories not associated with the proposed action and alternatives of the TC&WM EIS that are used for the cumulative impacts analysis. The Hanford 218-E-12B burial grounds include both Trench 94, in which the Navy reactor compartments are placed, as well as nearby burial trenches with other Hanford wastes. On page S-95, a single radionuclide inventory is listed for the 218-E-12B burial grounds. It is not possible to tell how much of the listed inventory is attributed to the Navy reactor compartments and how much comes from other Hanford waste. However, even if all of the listed radionuclides were from the Navy reactor compartments, they would not be consistent with the amounts listed in the 1984 and 1996 EISs on reactor compartment disposal. In order to be able to assess the small contribution *127-4*

127-1 Disposition of Navy reactor compartments was added to the list of items in the sections entitled "Decisions Not to Be Made" in the Summary, Section S.1.3.2, and Chapter 1, Section 1.4.2, of this EIS to clarify that the decisions regarding the Navy reactor compartment disposal were addressed in previous NEPA documentation.

127-2 Regarding the inclusion of reactor compartment disposal in the *TC & WM EIS* cumulative impacts analysis, the listing in Chapter 1, Section 1.10, of this final EIS is for purposes of identifying separate but related actions that are either pending or that have been completed. Chapter 6 identifies the actions considered as part of cumulative impacts and specifically mentions the U.S. Navy reactor compartments in Section 6.2.

127-3 The error identified by the commentor was corrected. The dose associated with Navy shipyard work was removed from the presentation of cumulative impacts on Hanford workers.

127-4 In reviewing the information provided by the commentor, DOE was unable to distinguish the stated discrepancies between the inventory reported in Appendix S and those provided in the commentor's letter. The inventory listed in Appendix S for the 218-E-12B burial ground includes both the inventory attributed to the Navy reactor compartments and other Hanford waste previously disposed of, as stated by the commentor. The source for this information is the Hanford Solid Waste Information Tracking System (SWITS), as reported through 2006, not the Navy's 1984 or 1996 EIS, as referenced in the comment. SWITS reports this information as one entry, which cannot be broken out to distinguish trench 94 from the other trenches in this burial ground. SWITS is the most recent and more comprehensive source for waste inventory for the burial grounds; therefore, this EIS uses this reference as its source document. Database updates from the 2006 SWITS are accounted for in the waste projections identified in Chapters 4 and 5 of this *TC & WM EIS* for disposal of waste at Hanford.

Commentor No. 127 (cont'd): T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

Ser 08R/10-00897

of the Navy reactor compartments to the overall cumulative impacts total, Trench 94 should be separately listed. The following information is provided to assist in such a listing.

a. In a letter dated July 22, 2002, the Navy provided information on the long-lived radionuclide content of Navy reactor compartments as a comment on the Draft Hanford Solid Waste EIS. This information was based not only on the data from the 1984 and 1996 EISs, but also additional Navy reactor compartments beyond those analyzed in these two EISs that could be expected to be disposed of at Hanford through 2046. The total amounts of C-14 and Tc-99 were 499 curies and 2.8 curies respectively. These curie totals would be appropriate for a separate listing of Trench 94 in Appendix S.

b. I-129 was not one of the key radionuclides emphasized in the Draft Hanford Solid Waste EIS, so it was not addressed in the Navy's 2002 comment letter. The amount of I-129 in Navy reactor compartments is very low. Some I-129 is present in activated structural metals as a result of trace uranium impurities in these metals. As discussed on page D-5 of the 1996 Navy EIS, the amount of I-129 in Navy reactor compartments varies from 2E-10 curie to 1.7E-7 curie. Multiplying these values by the total number of reactor compartments, the I-129 in structural metal would be less than 5E-6 curie. Trace amounts of fission product radionuclides are present in the layer of activated corrosion and wear products on the interior surfaces of plant components and piping systems within the reactor compartments. I-129 is not present in sufficient amounts in Navy plants to be measurable in these corrosion and wear products. However, by applying the same scaling factor for I-129 that is used for low level radioactive waste disposal curie calculation, the total amount of I-129 in all of the reactor compartments can be calculated. This would be less than 1E-3 curie for all of the reactor compartments. This amount is greater than the activated structural metal total, so 1E-3 curie would be the appropriate amount to include for I-129 in Trench 94.

c. On page S-148, a lead inventory of 1.06E7 kg is listed for the 218-E-12B burial grounds. It is not clear whether this value is intended to include the Navy reactor compartments or the nearby trenches, or both. Both the 1984 and 1996 Navy EISs state that lead shielding in excess of 100 tons is permanently built into each reactor compartment. Thus, while the 1.06E7 kg

127-4 cont'd

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Commentor No. 127 (cont'd): T. J. Mueller, Naval Nuclear Propulsion Program, Naval Sea Systems Command, U.S. Department of Defense

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value would be appropriate for the 100 reactor compartments evaluated in either the 1984 or 1996 EISs, a value of 3E7 kg would be appropriate for the total number of reactor compartments. The Navy's 1996 EIS included an evaluation of the long term impacts of this shielding lead. Due to the containment provided by the reactor compartment package, the very slow rate of corrosion of lead, and retention in the soil for long periods of time, lead did not result in any significant groundwater contamination for periods well in excess of 10,000 years.

d. On page S-148, a PCB inventory of 1.82E3 kg is listed for the 218-E-12B burial grounds. It is not clear whether this value is intended to include the Navy reactor compartments or the nearby trenches, or both. On page 4-32 of the 1996 Navy EIS, it is noted that older reactor compartments can contain up to about ten pounds of PCBs in solid materials, while newer compartments would contain much less. The 1.82E3 kg value would be a reasonable upper bound for PCBs in Navy reactor compartment packages based on the 10 pounds per reactor compartment value.

e. In the tables of chemical constituents for the various Hanford sites, the column header for chromium is listed as "Chromium (includes hexavalent chromium and chromium from $Na_2Cr_2O_7$)." No value is listed in this column for the 218-E-12B burial grounds (including Trench 94). On page 4-33 of the Navy's 1996 EIS, it is noted that approximately 1 kg of residual potassium chromate corrosion inhibitor is present within each reactor compartment package. Thus, approximately 200 kg of hexavalent chromium could be listed for Navy reactor compartments in Trench 94. The Navy reactor compartments each contain more than one ton of metallic chromium as an alloying element in corrosion resistant metals. The 1996 EIS includes an analysis of the long term corrosion of nickel, which is also present in these corrosion resistant metals, and concluded that due to the containment provided by the reactor compartment package, the very slow rate of corrosion of corrosion resistant metals, and retention in the soil for long periods of time, metals such as nickel and chromium did not result in any significant groundwater contamination for periods well in excess of 10,000 years.

127-4 cont'd

Response side of this page intentionally left blank.

Commentor No. 128: Gail W. Johnson

From: Gail Johnson [gailahree@yahoo.com]
Sent: Wednesday, March 10, 2010 1:30 PM
To: tc&wmeis@saic.com
Subject: No more waste at Hanford

Rethink Hanford as an option. The location to a major river makes this an especially dangerous choice for all people and wildlife within miles and miles. Until there is some way to decontaminate what already exists we have no right to burden future generations with the responsibility of our toxic waste. *128-1*

Sincerely,

Gail W. Johnson
Portland,Oregon

128-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

This EIS addresses the environmental impacts of retrieval, treatment, and disposal of tank waste and final closure of the SST system. It also evaluates the impacts of FFTF decommissioning, including management of waste generated by the decommissioning process. Finally, this *TC & WM EIS* evaluates the potential environmental impacts of ongoing solid-waste management operations at Hanford, as well as the proposed disposal of Hanford LLW and MLLW and a limited volume of offsite LLW and MLLW.

Commentor No. 129: Jim Minick

From: Jim Minick [jiminick@gorge.net]
Sent: Wednesday, March 10, 2010 1:31 PM
To: tc&wmeis@saic.com
Subject: HANFORD FUTURE COMMENT

Here is my comment concerning the future of Hanford :

As a citizen of Washington State and living within 1 mile of the Columbia here in Klickitat County, I do not want any more hazardous waste being brought to Hanford.

Have extended studies been conducted to see if Hanford should be the new National Radioactive Dump Site? No, they have not. But, by dumping there, it becomes the de facto dump site for the West. That is completely unacceptable. *129-1*

Can we trust that DOE will not allow that to happen ? Of course not. DOE has a terrible track record of lieing and misleading the public and wasting BILLIONS in tax payer money at Hanford. That would be one of the last agencies I would trust. I would not trust DOE to deliver my mail, let alone regulate hazardous waste. They have lost all credibility with me.

Jim Minick
5 Wilkins Dr.
Lyle, Washington
98635

Jim Minick
xxx-xxx-xxxx
jiminick@gorge.net
5 Wilkins Dr.
Lyle, Wa. 98635

129-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

The impacts of the offsite waste in terms of radiological risk are presented in the Summary, Section S.5.5.3, and Chapter 2, Section 2.10, Key Environmental Findings. These sections discuss the radiological risk differences between including and not including offsite waste disposal at IDF-East.

The *TC & WM EIS* analysis shows that receipt of offsite waste streams that contain specific amounts of certain isotopes, specifically, iodine-129 and technetium-99, could cause an adverse impact on the environment. Therefore, one means of mitigating this impact would be for DOE to limit disposal of offsite waste streams at Hanford. Other mitigation measures, such as recycling secondary-waste streams into the primary-waste-stream feeds within the WTP to increase iodine-129 capture in ILAW and bulk vitrification glass, are discussed in Chapter 7, Section 7.5, of this final EIS.

The current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

Commentor No. 130: Maxine Hines Huber

From: Maxine Huber [maxsprite@hotmail.com]
Sent: Wednesday, March 10, 2010 2:23 PM
To: tc&wmeis@saic.com
Subject: surprise, surprise another comment

Hello Mary Beth,

Maxine Hines Huber here in La Grande with my comments, at least they are usually short. Thanks again to all of you for coming to La Grande, it was the first time in many years. Bet you're worn out. Hope you get lots of emails and then get a rest. So here's my bit.....

If the decision is to leave the dirt under the tank without testing, then one would never know if the contamination was only 10 feet down and easily contained or if it was 70 and hard to deal with. If there is a huge hole, then line it and use it to hold the rest of the waste and contaminated dirt after treatment. So to not look is out of the question. To not act with long term cleanup intentions is not acceptable to me and many more. Retrieve, treat and dispose has been our mantra, capping is an unacceptable short cut. *130-1*

The plant is not a high priority if it's doing no harm and not costing lots to safeguard. Perhaps that could be done with stimulus money when available.

The honesty of the last EIS is impressive but supports the concerns we've all had for years, that it was a more contaminated situation than presented. So, now is the time to make permanent, long term commitments to a thorough cleanup. ARRA money is available, jobs are needed, the new wave of employees and mindset are in support, so are the people and mother nature. Tons of dirt have been moved and more can be, that part is manageable. Momentum and new thinking will come if the intent is set to do thorough cleanup. *130-2*

We are all most effective when body, mind and soul are working together. This is our job and it will work in sync with the earth's fantastic ability to cleanup our messes, we must participate to the fullest extent possible. The short cuts don't work. The contamination will arise again to haunt the fish, water, land, tribes, and the government.

Maxine Hines Huber 701 D Ave. La Grande, Or. 97850 xxx xxx-xxxx

130-1 The impacts of different levels of tank waste retrieval and of different types of SST system closure are addressed in the *TC & WM EIS* analyses. The clean closure alternatives considered for the SST system are represented by the Base and Option Cases of Tank Closure Alternatives 6A and 6B. For both Base Cases, the assumption is that the SST system would be cleaned to levels that would allow for unrestricted use, which would involve removal of the tanks, ancillary equipment, and soils beneath the tanks (contaminated as a result of past leaks) down to the water table. The two Option Cases represent this type of clean closure along with removal of soils beneath the tank farms (contaminated as a result of infiltration from the contiguous cribs and trenches [ditches]). Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

130-2 Comment noted.

Commentor No. 131: Mary McCracken

From: Mary McCracken [mcmcc@uci.net]
Sent: Wednesday, March 10, 2010 2:33 PM
To: tc&wmeis@saic.com
Subject: Hanford Cleanup

I was demonstrating in MN in the early 60's about nuclear problems. The guys from the Atomic Energy Committee said they were so clever there was no need to worry. I wasn't even that naive THEN. Now I'm just plain cynical. Let the (expletive deleted) seep in the Columbia, haul it in leaky containers, store it in leaky containers. no problem. How about drinking a bit with breakfast while taking your morning vitamins. This country has been RUINED by folks such as yourselves. mary mccracken

131-1

131-1 One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the site.

Commentor No. 132: Mary McCracken

From: Mary McCracken [mcmcc@uci.net]
Sent: Wednesday, March 10, 2010 3:18 PM
To: tc&wmeis@saic.com
Subject: nice talk

Mary Beth, Max says you are a very nice person. I guess that means I should talk pretty. Is this better?

To Whom It May Concern:

I trust a plan was created to ensure the protection our rivers, soil and children from Hanfords waste sites before they were ever created. I KNOW I can COUNT on my government to protect me! I believe all I've been told in history classes about what motivates the USA. Democracy for all, Peace, Justice, Equal Opportunity, Health Care, Shared wealth and resources. Thus I know we will be protected against toxic chemicals whether manufactured by the government in its pursuit of world dominance or by corporate agriculture in pursuit of profits. *132-1*

In god i trust. mary

132-1 Comment noted.

Commentor No. 133: Richard Mathis

From: richard [bienestar@gocomala.com]
Sent: Wednesday, March 10, 2010 5:02 PM
To: tc&wmeis@saic.com
Subject: Environmental Impact Statement (EIS) for Hanford Nuclear Reservation

I'm amazed that the public is not more informed of the gravity of the conditions at Hanford. The longer we allow leakage to spread, the more hopeless the situation. That we continue to generate waste, and would think to add it to an already bad situation, is unconscionable. I hope you will make clear our situation, and generate support for responsible practices. *133-1*

Sincerely,
Richard Mathis

133-1 The public hearings on the *Draft TC & WM EIS* were intended to inform and educate the public, as well as to collect comments on the draft EIS.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 134: Brian Bright

From: Brian Bright [bbright123@yahoo.com]
Sent: Wednesday, March 10, 2010 5:02 PM
To: tc&wmeis@saic.com
Cc: lisa@hoanw.org
Subject: Public Comment on the Draft Tank Closure & Waste Management Environmental Impact Statement

My name is Brian Bright and I'm a student a the University of Washington. I want to say that the DOE bureaucracy is committing first degree murder by knowingly transporting nuclear waste through highways, and any deaths in the future caused by the radioactive Columbian. I grew up next to the Columbian, and already it isn't safe to swim there because of pollution. Why are you contributing more to the problem instead of trying to fix it? Dumping waste at the Hanford site is contradictory to what the people need. Bureaucracy was created to serve the people, but what you're doing shows that all the DOE cares about is money and quick solutions. *134-1*

134-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Monitoring data and potential doses to a variety of receptors are reported annually in the Hanford Site environmental reports (Poston, Duncan, and Dirkes 2011). As presented in Chapter 3, Table 3–13, of this *TC & WM EIS*, the estimated dose from liquid releases from Hanford to the MEI in 2010 was 0.056 millirem.

Commentor No. 135: Gary L. Westerlund

From: Gary Westerlund [gwesterlund@readysetsurf.com]
Sent: Thursday, March 11, 2010 12:18 PM
To: tc&wmeis@saic.com
Subject: Hanford Tank Closure and Waste Management E.I.S.

I'd like to make some comments concerning the Tank Closure and Waste Management E.I.S. for Hanford. Hanford is not a suitable site for long term which means 1000's of years storage of radioactive waste. All tanks with radioactive waste eventually leak and the tanks at Hanford are already leaking. The radioactive contamination is spreading rapidly through the soil to the ground water and Columbia River. Long term storage of radioactive waste should be in a deep geological repository where any leakage cannot reach ground water, lakes or rivers. Thus, Hanford should be cleaned up and shut down. No new waste should be shipped to Hanford. *135-1* *135-2* *135-3*

Since all waste at Hanford should be cleaned up, another Waste Treatment Plant needs to be built as soon as possible so all Low Activity Waste can be vitrified for permanent storage. It is not acceptable to use half-good treatments such as bulk vitrification, cast stone treatment or steam reforming for radioactive waste that will be dangerous for 1000's of years and that could leak into ground water or rivers. *135-4*

The Fast Flux Test Facility should not be entombed in cement ant left at Hanford. It should be removed and the site restored which is the Washington State standard for decommissioning nuclear reactors. *135-5*

Sincerely,

Gary L. Westerlund
9623 S. 205th Pl
Kent, WA 98031
xxx xxx-xxxx

135-1 DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. The TPA, a legal agreement between DOE, Ecology, and EPA, identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

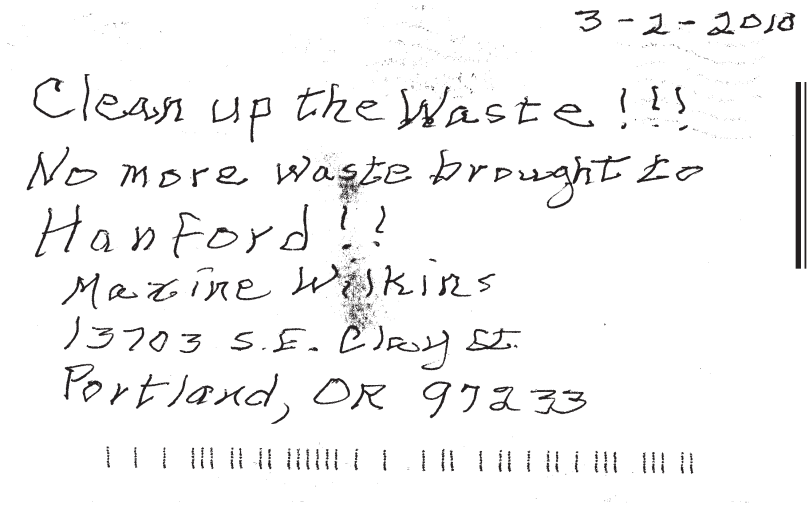
135-2 Regarding the commentor's concern about the disposition of HLW, the current Administration has established a Blue Ribbon Commission on America's Nuclear Future that has issued a report and recommendations for a path forward for managing the country's HLW. DOE's decisions regarding management of Hanford waste will be consistent with Administration policies. For a more comprehensive discussion of this topic, see Section 2.10 of this CRD.

135-3 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

135-4 As discussed in the *TC & WM EIS* Summary, Chapter 1, and Chapter 2, this EIS analyzes additional waste treatment capability that includes expanding the vitrification process capability currently being constructed in the WTP or supplementing the WTP's capability with supplemental treatment technologies. Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies.

135-5 Under NEPA, agencies identify the laws, regulations, and requirements that may apply to the proposed action and alternatives in an EIS and identify where standards may be exceeded. Chapter 8 of this *TC & WM EIS* provides both a listing and short descriptions of the laws, regulations, and requirements that may apply to the proposed actions, including FFTF decommissioning.

Commentor No. 136: Maxine Wilkins



3-2-2010

Clean up the Waste!!!
No more waste brought to
Hanford!!
Maxine Wilkins
13703 S.E. Clay St.
Portland, OR 97233

136-1

136-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 137: Frances and Bill Geske

WILLIAM P. GESKE
William P. Geske
716 NE 108
PORTLAND, OR 97220

3/5/10

NO MORE WASTE

CLEAN UP AT

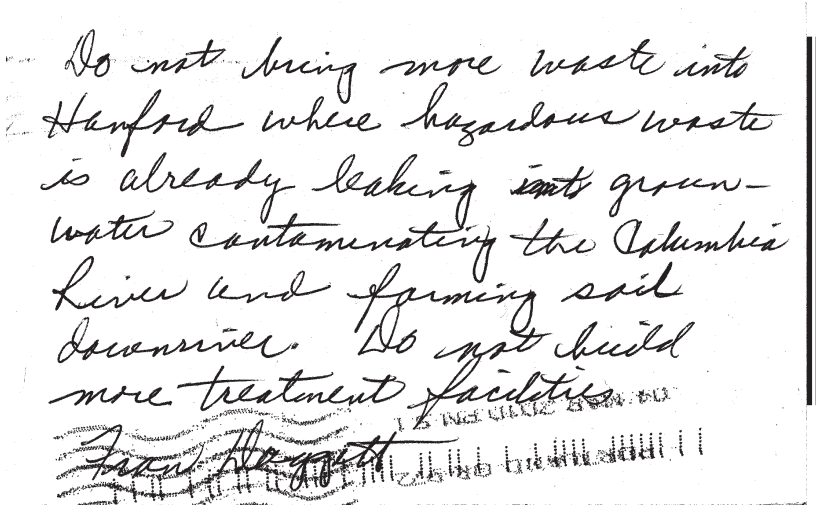
HANFORD.

Frances & Bill Geske
454 NE Lamont Rd.
Portland Oregon 97232

137-1

137-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 138: Fran Daggett



Do not bring more waste into Hanford where hazardous waste is already leaking into groundwater contaminating the Columbia River and farming said downriver. Do not build more treatment facilities.

Fran Daggett

138-1

138-1 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 139: Roddy M. Daggett

– DO NOT BUILD MORE FACILITIES FOR TREATMENT OF ADDITIONAL TANK WASTE. *139-1*

– DO NOT BRING IN TO HANFORD MORE WASTE *139-2*

– CLOSURE OF SINGLE-SHELL TANK (SST) SYSTEM. LANDFILL CLOSURE EITHER USING CLEAN OR CONTAMINATED SOIL IS NOT ACCEPTABLE. THE COLUMBIA RIVER IS ALREADY IN GREAT JEOPARDY OF CONTAMINATION. *139-3*

Roddy M. Daggett
RODDY M. DAGGETT

139-1 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs are known or suspected to have leaked. It is likely that some of these tanks continue to leak liquid waste into the subsurface. The construction of the WTP has already commenced and its currently planned configuration includes two HLW and two LAW melters. Treatment of tank waste with this configuration without expanded capacity or supplemental treatment is analyzed under Tank Closure Alternative 2A, where treatment through the WTP would last until 2093. However, under this configuration, construction of a replacement WTP and new DSTs would still be required because the design life of these facilities would be exceeded. Under all action alternatives, either (1) treatment of tank waste would need to be expedited by increasing tank waste treatment capacities (i.e., through WTP expansion and/or constructing supplemental treatment facilities) or (2) construction of replacement facilities to replace those that exceed their design life (i.e., the WTP and/or DSTs) would be required. Without supplemental treatment technologies or expanded WTP capacity, retrieval and treatment of tank waste would take significantly longer to complete, as presented in Chapter 2, Section 2.5.2.

139-2 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

139-3 The impacts of different types of SST system closure are addressed in the *TC & WM EIS* analyses. These include Tank Closure Alternatives 4, 6A, and 6B, which evaluate 99.9 percent retrieval of the tank waste and clean closure of all or part of the SST system. This closure includes the tank system, along with the vadose zone as impacted by the tank farms (i.e., past leaks). Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or

Commentor No. 139 (cont'd): Roddy M. Daggett

the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

Commentor No. 140: Carol Brooke

From: Carol Brooke [carolbrookems@yahoo.com]
Sent: Wednesday, March 10, 2010 5:31 PM
To: tc&wmeis@saic.com
Subject: Toxic Wast Dump Plan

Dear Mr. Gregory H. Friedman,

I just heard that you are planning a toxic waste dump in the Portland, Oregon area. Is this true?

This is unacceptable. Why would we want to destoy this beautiful environment? I am asking that you please stop this. Oregon is not the right place for this. I purposely moved here from an environment with dirty air and rude people. I love Oregon. Please don't send environmental waste here. We are a green state that recycles and cares for our environment.

Please stop this plan.

Thank you,

Carol Brooke

Classroom Crafting with Carol
www.CarolBrookeBooks.com

140-1

140-1 This *TC & WM EIS* does not evaluate waste disposal in the state of Oregon. This EIS analyzes the potential impacts of various Hanford waste management activities on the environment and human health.

Commentor No. 141: Blair Anundson, Consumer and Democracy Advocate, WashPIRG

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF ENERGY

TC & WM EIS

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 03/08/10

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS?)*
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS?)*

***** CONTINUE ON BACK FOR MORE SPACE *****
***** CONTINUAR AL DORSO PARA MÁS ESPACIO *****

Name/Nombre: Blair Anundson, WashPIRG Consumer and Democracy Advocate

Address/Dirección: 1402 3rd Ave, Suite 715

City, State, Zip Code/Ciudad, Estado, Zona Postal: Seattle, WA 98101

NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

Response side of this page intentionally left blank.

Commentor No. 141 (cont'd): Blair Anundson, Consumer and Democracy Advocate, WashPIRG

03/08/10

Hanford Testimony:

My name is Blair Anundson and I'm the Consumer and Democracy Advocate for WashPIRG, the Washington Public Interest Research Group. We're a non-profit, non-partisan public interest advocacy organization with over 18,000 members across the state. WashPIRG favors cleaning up all existing hazardous material at Hanford, investigating the presence and impact of leaks from any of the tanks farms at the site, and prohibiting the importation of additional material until the existing wastes are safely disposed of. *141-1*

This is one of the most heavily polluted sites in the western hemisphere and this pollution presents a growing threat to public health. Contaminated groundwater beneath the site covers an area larger than the city of Seattle, with estimates ranging between eighty and two hundred square miles. Groundwater from the site feeds pollution into the Columbia River, which flows directly along the border of the Hanford Site for more than 50 miles past nine full-scale nuclear reactors and hundreds of liquid waste and burial sites. *141-2*

This flow of hazardous toxins presents a serious risk to the health of people and wildlife below the site and the economy of the region. There are 42 cities and towns downriver from Hanford and businesses in Oregon and Washington along the Columbia create 750,000 jobs, with payrolls totaling $27.5 billion dollars. In Washington alone, farming below Hanford is worth $6.4 billion dollars. And the Columbia River has the single most important salmon run of the entire region. *141-3*

We've waited for over twenty years as the DOE has delayed and under funded cleanup efforts. In 2004, we passed I-937 overwhelmingly. WashPIRG campaigned on that issue and, over the course of four months, we talked to a quarter of a million Washington residents. The sentiment among Democrats, Republican, and Independents was the same: clean up the existing mess before bringing any additional waste into our state. The voters of this state are tired of waiting and they're tired of delays. They want to see action on this issue now and we should pursue policies that reflect their wishes. *141-4*

141-1 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

141-2 Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

141-3 Relevant data indicate that current Hanford operations do not represent a serious health threat to Columbia River users. Monitoring data and potential doses to a variety of receptors are reported annually in the Hanford Site environmental reports (Poston, Duncan, and Dirkes 2011). As indicated in Chapter 3, Table 3–13, of this *TC & WM EIS*, the estimated dose from liquid releases from Hanford to the MEI in 2010 was 0.056 millirem. The risk of a fatal cancer from this dose is lower than 1 in 35 million.

This EIS analyzes the potential environmental impacts associated with a specific set of proposed actions and reasonable alternatives for the storage, retrieval, treatment, and disposal of tank waste generated from defense plutonium production activities; closure of SSTs containing HLW; decommissioning of FFTF; and continued management of LLW and MLLW at Hanford. Potential long-term impacts are presented in Chapter 5; details of the potential long-term ecological impacts, in Appendix P; and long-term human health impacts, in Appendix Q. Projected impacts will be considered by DOE in making

Commentor No. 141 (cont'd): Blair Anundson, Consumer and Democracy Advocate, WashPIRG

the decisions as discussed in the Summary, Section S.1.3.1, and Chapter 1, Section 1.4.1, Decisions to Be Made.

141-4 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

See response to comment 141-1 for a discussion on the transport and disposal of offsite waste.

Commentor No. 142: Karina Putri Indrasari

TANK CLOSURE AND WASTE MANAGEMENT ENVIRONMENTAL IMPACT STATEMENT

U. S. DEPARTMENT OF ENERGY

TC & WM EIS

Comment Form
Formulario para comentarios

Thank you for your input
Gracias por su participación

PLEASE PRINT / FAVOR DE ESCRIBIR CLARAMENTE

Date/Fecha: 2/8/2010

1. What comments do you have on the *Draft Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington (TC & WM EIS)*?
¿Que comentarios tiene usted sobre el *Borrador de la Declaración Sobre el Impacto Ambiental del Cierre de Contenedores y la Disposición de Desechos del Establecimiento de Hanford, Richland, Washington (TC & WM EIS)*?

Hanford is the most contaminated site on Western hemisphere. I just concern about our future generations if we keep dumping more waste to hanford without cleaning the previous nuclear waste, how can our future generation live healthy or even longer than we are? I have two points to make here. First, just stop dumping more waste to Hanford, ~~and stop~~ second, clean the waste in Hanford and protect our environment.

*** CONTINUE ON BACK FOR MORE SPACE ***
*** CONTINUAR AL DORSO PARA MÁS ESPACIO ***

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NOTE: Please do not include personal information (such as address or phone number) if you object to it being included in the *TC & WM EIS*. Comments received, including contact information, are published in the *TC & WM EIS* in their entirety.
NOTA: Favor de excluir información personal (dirección o número de teléfono) que desea que no aparezcan en el *TC & WM EIS*. Comentarios recibidos, incluyendo la información personal proporcionada, serán publicados en el *TC & WM EIS*.

For more information contact: Mary Beth Burandt, Document Manager,
TC & WM EIS, P.O. Box 1178, Richland, WA 99352
Toll-free Telephone: 1-888-829-6347 • Toll-free Fax: 1-888-785-2865
E-mail: TC&WMEIS@saic.com

142-1

142-1 In general, the scope of this *TC & WM EIS* does not include groundwater remediation activity as part of the proposed actions evaluated. However, DOE is implementing an extensive, ongoing cleanup program at Hanford, as required under RCRA, CERCLA, and/or the TPA, a legal agreement between DOE, Ecology, and EPA. The TPA identifies cleanup actions and schedules, called milestones. The TPA agencies completed negotiations on several Hanford cleanup projects, including the establishment of 29 additional and/or accelerated groundwater and Columbia River protection milestones and target dates.

Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

Commentor No. 143: Janice Faris

Passing on nuclear waste to future generations is cruel. It is our moral responsibility to not create more waste and to treat and dispose of current waste in the safest manner possible. That means on site, not hauling radioactive waste down the freeway to the Idaho National Lab or bringing more to Hanford. We all know the hazards involved with highway travel and with rail travel too. Given the vulnerability of any cargo container that is in motion, one can easily imagine it to be a perfect target for a terrorist or mentally unstable person to say nothing of weather-related accidents or driver error. *143-1*

The DOE's proposal of leaving 1% of the material in the leaking tanks actually means leaving 30% of the most highly radioactive components because the heavy metals settle and accumulate at the bottom. *143-2*

Sorry to say but some of the USDOE's preferred alternatives sound like a true sociopath made them up. I sight: "The USDOE's preferred alternative in the TC & WM EIS is to leave forever the bulk of the contamination from tank leaks and deliberate discharge along with the tanks themselves, under dirt caps instead of cleaning up the contamination" Reference: Heart of America Northwest Research Center *143-3*

Even the USDOE report has acknowledged that "Tank Farm vadose zone work essentially disproved some long-held assumptions that the contamination from the tanks did not migrate and therefore was not a significant environmental risk". This is not news to me as years ago, The Seattle Times documented groundwater contamination going into the Columbia River. *143-4*

So what about the Vitrification Plant? How many years behind and billions of dollars over budget is it? How are the design plans coming? Are there design plans or does it continue to be "design as you go?" Or should it be called "THE FOREVER PROJECT"? *143-5*

We have all feared an insane, sociopathic leader whose finger could ignite a worldwide nuclear war but now we are faced with insane, sociopathic alternatives presented by the DOE which are just as fatal.
"This is the way the world ends
This is the way the world ends
This is the way the world ends
Not with a bang, but a whimper" T.S. Elliot

Check out Helen Caldicott's website and books to learn how radioactive contamination acts on all living cells. Google "depleted uranium and birth defects in Fallujah" to see what uses our spent nuclear wastes have been put to. I think once you are informed you will agree that the use of depleted uranium in munitions should be declared a crime against humanity.

Janice Faris
Renton, WA

143-1 Regarding the commentor's concern about the transport of LLW and MLLW from other DOE sites to Hanford for disposal, DOE will be deferring the decision on sending LLW or MLLW from other DOE sites to Hanford for disposal (with some limited specific exceptions), at least until the WTP is operational, subject to appropriate NEPA review. For a more comprehensive discussion on the transport and disposal of offsite waste, see Section 2.1 of this CRD.

143-2 With regard to the disproportionate amount of radioactivity in the residues at the bottom of the tanks, DOE currently does not have a technical basis for making more-specific assumptions about the expected compositions of the waste "heels" that would remain in the tanks after retrieval. Retrieval has been completed for only a small number of SSTs, and not much is known about the behavior of, or ability to remove, small volumes of residual waste. However, the tank closure process, which includes detailed examinations of the tanks, residual waste, and surrounding waste in the soil, requires preparation of detailed performance assessments and a closure plan. These documents will provide the information and analysis necessary for DOE and the regulators to make specific decisions on what levels of residual tank waste are acceptable in terms of short- and long-term risks. For a more comprehensive discussion of this topic, see Section 2.2 of this CRD.

143-3 The commentor is referred to Chapter 2, Section 2.12, for a discussion of DOE's Preferred Alternatives for tank closure, FFTF decommissioning, and waste management. Regarding the status of groundwater contamination and remediation at Hanford, groundwater remediation activities, as required under RCRA, CERCLA, and/or the TPA, are in various stages of assessment, risk-based end-state development, corrective action, and/or active remediation. For a more comprehensive discussion of remediation at Hanford, see Section 2.3 of this CRD.

One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks. Decisions made by DOE on the proposed actions will be based on a number of factors, including health and safety, environmental, economic, and technical considerations; agency statutory missions; and national policy considerations. The decisions on the selected course of action and supporting rationale will be documented in a ROD issued no sooner than 30 days after the EPA Notice of Availability for this *Final TC & WM EIS* is published in the *Federal Register*.

143-4 As analyzed in this *TC & WM EIS*, 67 of the 149 SSTs at Hanford are known or suspected to have leaked liquid waste to the environment between the 1950s and the present, some of which has reached the groundwater. Estimates of the total leak loss range from less than 2.8 million to as much as 3.97 million liters (750,000 to 1,050,000 gallons). DOE recognizes that groundwater contamination from past leaks is a concern at Hanford and its potential impact on communities downriver from Hanford. One of the purposes of this *TC & WM EIS* is to analyze potential impacts of DOE's proposed actions to retrieve waste from the buried tanks, treat and dispose of this waste, and close the SST farms. This analysis is also intended to aid DOE in making decisions regarding cleanup of the past leaks.

143-5 DOE is working diligently to bring the WTP online to treat the tank waste at the site as soon as possible. Chapter 1, Section 1.2, provides a brief history and background on DOE's efforts to reduce costs and speed up Hanford cleanup efforts. As discussed in the *TC & WM EIS* Summary, Chapter 1, and Chapter 2, this EIS analyzes additional waste treatment capability that includes expanding the vitrification process capability currently being constructed in the WTP or supplementing the WTP's capability with supplemental treatment technologies. Thus, decisions to be made by DOE regarding whether to treat all waste in the WTP, as is or expanded, or to supplement its capacity by adding new treatment capability depend on demonstrating the feasibility of supplemental treatment technologies. Therefore, DOE has no plans to build "more than one such plant." As noted in the Summary, Section S.3.1.4, and Chapter 2, Section 2.2.2.2, the WTP is currently being constructed in the 200-East Area of Hanford. Site work associated with the project began in late 2001 and construction is more than 62 percent complete. Details regarding the WTP are provided in Appendix E, including its design and processes, waste-form performance, waste forms/disposal packages, and assumptions and uncertainties.

Commentor No. 144: Angela Samsel

U.S. DEPARTMENT OF ENERGY

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Thank you for your input
Gracias por su participación

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Date/Fecha: 03/08/10

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My name is Angela, I am a student at Seattle University and as part of one of my classes I volintaer with the organization Heart of America Northwest, a watch dog group for Hanford, WA. Working for this organization has really opened my eyes to the serious issues with the EIS and the radioactive waste already present in Hanford. I have learned that already over a million gallons of waste have leaked from these tanks contaminating ground water that is flowing towards the Columbia River. I have become very concerned about what this will mean for the future of the Pacific Northwest, the place I call home. I feel that the DOE should be working on cleaning up Hanford using the clean closure standard instead of trying to turn it into a national radioactive waste dump. I believe we need to act responsibly, consciously, and most importantly we need to act now, before the problem gets worse.

** CONTINUE ON BACK FOR MORE SPACE **
** CONTINUAR AL DORSO PARA MÁS ESPACIO **

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E-mail: TC&WMEIS@saic.com

144-1

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