



## Department of Energy

Washington, DC 20585

September 18, 2009

Mr. Gene Aloise  
Director of Natural Resources and Environment  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Mr. Aloise:

Thank you for the opportunity to review the draft report "Nuclear Waste: Uncertainties and Questions about Costs and Risks Persist with DOE's Tank Waste Cleanup Strategy at Hanford." Although we generally agree with three of the four recommendations, we would like to provide clarifications regarding key technical and legal uncertainties facing the Tank Waste project at Hanford. In addition, we are concerned with how the U.S. Government Accountability Office (GAO) has characterized the Office of Environmental Management's (EM) progress at Hanford. Specifically, we believe the report's findings should provide a better supported, balanced and more accurate portrayal of EM's Tank Waste Strategy at Hanford, in part by including descriptions of ongoing initiatives and actions, a number of which EM launched in recognition of the need for improvement. We are providing our concerns on the draft report below and through technical comments, which include factual corrections to certain information in GAO's draft report. We are looking forward to reporting in the future on the progress being made as we continue to focus on removing waste from tanks, finishing construction of the Waste Treatment Plant (WTP), and initiating waste treatment operations.

We believe that we have gained substantial experience over the past decade in the cleanup of tank waste within the EM complex with the vitrification of waste at Savannah River Site's (SRS) Defense Waste Processing Facility, with the cleanup in New York State's West Valley Demonstration Project and Oak Ridge, and from waste processing and tank closures completed at Idaho National Laboratory (INL). This experience is applicable to our challenges at Hanford and informs our technical and project management approach. In 2009, one of our key initiatives is an Integrated Project Team specifically to evaluate current and emerging tank waste strategies for Hanford and SRS, to take advantage of best practices and lessons learned, and to provide recommendations on which strategies to pursue to reduce technical risks and uncertainties. This is one example of information we believe is critically important to the concerns raised and the characterization of this program by the GAO, but absent from the draft report.

We agree that some technical uncertainties remain; however, we believe that we have developed a systematic approach to evaluate alternative strategies and transformational solutions that will continue to improve and optimize the tank waste operations and help us realize life-cycle cost reductions. We believe that the processes we have put in place



to reduce technical uncertainties will result in the resolution of the issues in a timely manner. We have gained a great deal of experience in tank waste characterization, retrieval, treatment, and immobilization from the cleanup efforts at other sites and believe that this experience will also help to reduce uncertainties at Hanford. Tank closure and waste processing successes have been realized at Department of Energy (DOE) facilities at West Valley, SRS, Oak Ridge, and INL. At West Valley, for instance, 628 tons of glass in 275 canisters were produced, immobilizing 8,640 cubic feet of high-level waste. Since 1996, SRS has vitrified over 2.6 million gallons of sludge waste, and since 2008 has vitrified about 2.9 million gallons of high-level waste producing over 2,700 canisters of high-level waste that are in two onsite storage facilities. At Oak Ridge 8 tanks with a capacity of 90,000 gallons were cleaned and grouted, and at INL 11 high-level waste tanks with a capacity of 2.2 million gallons were grouted and closed. The River Protection Project (RPP) takes advantage of that experience in many ways; e.g., through lessons learned, technical exchanges, contracting and through interaction of contractor and Federal staff that have been involved in operations at these sites. Highlights of these exchanges included updated approaches to high-level waste tank integrity, new approaches to tank chemistry, and aluminum and chromium mitigation.

The report should be revised to reflect that the Secretary of Energy is planning on convening a Blue Ribbon Panel to evaluate the options for high-level waste disposal, and the Panel will provide DOE recommendations to resolve this issue. In the meantime, EM has already built two interim storage facilities at SRS and one at Hanford (Canister Storage Building). Therefore, we are confident that we are fully able to build interim storage facilities at Hanford if necessary and will be able to calculate life-cycle costs for this operation at Hanford, if it is needed. We believe it is premature to anticipate these costs until after the Blue Ribbon Panel completes its work.

DOE agrees that it is important to assess the impacts on human health and the environment for the range of possible cleanup strategies with regard to the Hanford tanks. To that end, the Department is nearing completion of a draft Environmental Impact Statement (EIS) which rigorously evaluates 11 alternatives for accomplishing cleanup of the tanks ranging from no action to complete removal of the tanks. The Office of River Protection provided the GAO access to review the draft EIS.

While DOE has assessed the costs and risks of its actions at Hanford, it is important to recognize that the Department has limited discretion when it comes to decisions on how to proceed with cleanup. Pursuant to Federal law, DOE must comply with state requirements for control of hazardous waste (such as the chemical constituents of the tanks at Hanford) "in the same manner and to the same extent as any person is subject to such requirements" (42. U.S.C. section 6961). The pertinent Washington State regulatory framework requires the use of best available technology. Hanford's Tri-Party Agreement thus requires removal of 99 percent of waste from the tanks using available technologies.

Likewise, the regulatory framework established by Congress in Section 3116 of Public Law 108-375 (if it were applicable to Hanford) would require a technology-based

approach where highly radioactive radionuclides are removed from the tanks to the maximum extent practical.

DOE agrees that it is important to develop credible and complete life-cycle cost and schedule estimates, and we have done this. We believe that our estimates represent our most current and best understanding of the actions necessary to meet regulatory commitments and to complete tank waste cleanup at Hanford. The Tank Farms Project (TFP) life-cycle cost estimate range is between \$44 and \$62 Billion (B). The Office of Engineering and Construction Management (OECM) verified the reasonableness of that range. An External Independent Review of the TFP was performed as required in DOE Order 413.3A prior to validation of the near-term baseline. The WTP total estimated contract price is \$11.07B, including incentives and award fee; \$12.26B when DOE contingency and other DOE project costs are included. This cost was reviewed by the U.S. Army Corps of Engineers, validated by OECM, and approved by the Deputy Secretary of Energy in late 2006. The RPP, which includes TFP and WTP, total cost range is \$56B to \$74B as provided during the factual accuracy review with your staff. GAO, instead, chose to use a point estimate of their own construct.

EM utilizes strategic planning in developing its overall approach to high-level waste treatment at Hanford, and other sites where such waste was created, to reduce life-cycle costs. This effort includes ongoing evaluations to identify opportunities for cost and schedule improvement and risk reduction, and the use of External Technical Reviews and Technology Readiness Assessments to focus attention on resolving technical uncertainties and ensuring that technology risks are properly managed. EM focuses its Technology Development and Demonstration (TDD) efforts to identify and develop promising technologies for use in further reducing baseline costs and schedule durations, and has requested more than a three-fold increase in TDD funding in fiscal year (FY) 2010.

The draft GAO report should provide a better context for its analysis of the challenges at Hanford. The GAO's conclusion in 2001 (GAO-01-284, Nuclear Cleanup: Progress Made at Rocky Flats, but Closure by 2006 Is Unlikely, and Costs May Increase) stated that "Kaiser-Hill and DOE are unlikely to meet the December 2006 target closure date" for Rocky Flats, and yet this closure date was indeed met by DOE and the Rocky Flats cleanup contractor Kaiser-Hill. The Rocky Flats cleanup was completed nearly 50 years earlier and for \$20.5B less than original estimates. As recommended by the GAO in 2006 (GAO-06-352, Nuclear Cleanup of Rocky Flats: DOE Can Use Lessons Learned to Improve Oversight of Other Sites' Cleanup Activities), EM used the lessons learned from Rocky Flats for other cleanup efforts across the complex to accomplish extremely successful cleanups. We won the Project Management Institute award for our prowess in project management in 2006 and 2007 for the Rocky Flats and Fernald cleanup projects, respectively.

The draft GAO report does not recognize existing DOE risk management efforts. The report states that DOE has not applied risk-informed decision making to its tank waste cleanup strategy. While there is a limited discussion of the Tri-Party Agreement and

draft EIS, there are gaps in addressing the overall RPP risk management. Uncertainties noted in the report are in the RPP risk management plan and risk mitigation actions, and contingencies are included in the life-cycle baseline, yet GAO fails to mention this.

In addition, the Tri-Party Agreement does include provisions for mitigation of programmatic risk; Appendix H is in place to provide a means to set, evaluate, and revise criteria for determining the allowable residual waste following waste retrieval operations on the Hanford single shell tanks (SST). The process allows reassessment of the retrieval goals based upon the tank farm retrieval experience. A Performance Assessment for each SST waste management area will be performed. This process includes a risk-based analysis. Finally, the draft EIS provides a cumulative risk analysis of the overall process.

As new technological improvements are developed, we are committed to continuously assess the strategies and operations of the WTP to ensure that it is protective of human and ecological health and that it is operated cost effectively and efficiently.

Although we agree with the finding that “Some Opportunities May Exist to Reduce Costs of DOE’s Hanford Tank Waste Cleanup Strategy,” it may be premature to state that “Allowing More Residual Waste to Remain in Selected Tanks at Closing Could Help Reduce Costs without Adding Risks to Human and Ecological Health.” We need to complete the analysis for the tank closure demonstration project in collaboration with Washington State and the U.S. Environmental Protection Agency and to work with the regulators to determine what will be acceptable.

With the August 11, 2009, announcement by Secretary of Energy Chu, Washington State Governor Gregoire, Oregon State Governor Kulongoski, U.S. Senators Murray and Cantwell, and Acting Assistant Attorney General Cruden, we have a proposed legal settlement for Hanford (still subject to a public comment period). Under the agreement, DOE will prepare a life-cycle analysis of all Hanford cleanup costs to meet the legally mandated timelines for cleanup. We are also committed to an “End Date Review Process” that will ensure that the Hanford tank waste cleanup remains as aggressive as possible. In addition, DOE is committed to publishing an upcoming draft EIS that fully examines the costs and consequences of a wide range of cleanup options.

The draft GAO report does not acknowledge the work that DOE has been doing on the RPP. It does not reflect the successful tank waste treatments that DOE has completed nationwide, which have advanced the RPP tank waste cleanup efforts. Furthermore, the report does not adequately acknowledge the environmental risk reduction activities that DOE has performed. Removal of the pumpable liquids from SSTs to achieve Interim Stabilization was conducted from late 1970 until 2005. In addition, DOE has removed 140 million curies from Hanford’s tanks in the form of cesium and strontium capsules.

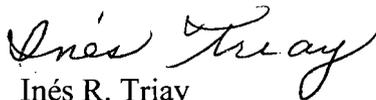
We generally agree with GAO’s recommendation one, two and four. We believe that we have a process for developing credible and complete life-cycle cost and will continue to update the costs on an annual basis. We already have a risk assessment framework for Hanford and will be publishing the draft EIS in FY 2010. We continue to work closely

with the States of Washington and Oregon, the Tribal nations, the Environmental Protection Agency, the Defense Nuclear Facility Safety Board, the Hanford Advisory Board, and other stakeholders to complete Hanford's cleanup.

DOE does not agree with GAO's third recommendation. At this time, we do not believe that we need to seek clarification from Congress about the Department's authority at Hanford to determine whether some waste now managed by DOE as high-level waste can be treated and disposed of as a waste type other than high-level waste. Our focus for the next ten years is to remove waste from tanks, finish construction of the WTP, and initiate waste treatment operations.

Again, thank you for your assistance as we seek to strengthen our tank waste cleanup strategy at Hanford. We welcome direct dialogue with you on these issues prior to finalizing your report. We would also appreciate you including the enclosed comments in the final report. If you have any questions with regard to these comments, please contact me at (202) 586-7709 or Mr. Mark Gilbertson at (202) 586-0755.

Sincerely,



Inés R. Triay  
Assistant Secretary for  
Environmental Management

Enclosure

cc:

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