



**U.S. Department of Energy
Hanford Site**

03-ORP-027

March 14, 2003

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Addressees:

**RESPONSE TO CONCERNS REGARDING U.S. DEPARTMENT OF ENERGY (DOE)
WASTE MANAGEMENT DECISIONS**

Reference: Ecology/EPA letter from Michael A. Wilson and Nick A. Ceto to Keith Klein, RL, and Roy Schepens, ORP, dated March 13, 2003.

This letter responds to your March 13, 2003, letter expressing your concerns regarding Hanford waste management decisions. The DOE Office of River Protection and Richland Operations Office have taken great strides in moving cleanup activities forward in an accelerated and environmentally protective manner. Your letter addresses three main areas of concern: removal of Technetium-99 (Tc-99); use of a consolidated waste facility; and continued use of unlined trenches. We address each concern below:

1. Technetium-99 Removal

We are aware of your concerns regarding the elimination of the Tc-99 removal equipment from the pretreatment plant. We do not agree that Tc-99, if not removed, would constitute a significant threat to human health and the environment. Further, Tc-99 removal is neither a technically practical nor a cost-effective solution. We have met several times with the State of Washington Department of Ecology (Ecology) to discuss this and other points raised in your letter.

As you are aware, we have another meeting planned at the end of this month for that purpose. Let us reiterate facts that we have already discussed:

- **The concentration of Tc-99 in the tanks is at the low end (Class A) of the low-level radioactive waste (LLW) levels established by the U.S. Nuclear Regulatory Commission (NRC) as being suitable for land disposal.** DOE has primary regulatory responsibility over radioactive materials that it possesses under the Atomic Energy Act of 1954 as amended. DOE refers to NRC regulations for guidance and frequently confers with the NRC on radioactive waste treatment and disposal approaches. The Tc-99 concentrations predicted to be in the Hanford low-activity waste (LAW) are less than the 50% of the Class A low-level radioactive waste concentrations set forth in NRC regulations, 10 Code of Federal Regulations Part 61, Licensing Requirements for Land Disposal of Radioactive Waste. Class A is the lowest Low-Level Waste category with no waste form requirements other than being an essentially dry solid. Our plans include the use of robust waste forms, such as borosilicate glass, for Hanford LAW.
- **Publicly available Performance Assessments for LAW disposal on the Hanford Site show that the LAW waste form and disposal system are fully protective of human health and the environment.** You and your staff, as well as independent national experts, have reviewed those publicly available analyses. It is clear from those analyses that for the current glass waste form, Tc-99 removal is not required to meet any regulation or requirement. We are also contemplating the use of supplemental waste forms in addition to glass and have agreed that any supplemental waste form and disposal system must also be fully protective of human health and the environment. Final decisions on these waste forms will be based on performance analysis and real waste data.
- **Tc-99 removal had previously been determined not to be practical for Hanford waste.** This determination was made in a detailed technical analysis¹ that was reviewed by the NRC. The 1997 NRC letter to DOE² setting forth the conditions for radionuclide removal in the Waste Treatment Plant (WTP) did not require Tc-99 removal on the basis of that analysis. Even though the analysis and our agreement with the NRC indicated Tc-99 removal was not practical, we did include Tc-99 removal in the WTP conceptual and preliminary design. The work done during design has again confirmed that Tc-99 removal is not a practical, cost-effective process.

¹ Technical Basis for Classification of Low-Activity Waste from Hanford Site Tanks, WHC-SD-WM-TI-699, Rev. 2, September 1996.

² Letter from Carl J. Paperiello, Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C., to Jackson Kinzer, Assistant Manager, Office of Tank Waste Remediation System, U.S. Department of Energy, Richland Operations Office, Richland, WA, Re: Classification of Hanford Low-Activity Waste Fraction, June 9, 1997.

You commented that not removing Tc-99 represents a “significant environmental threat at the point of disposal.” We do not believe that to be true. The LAW will be disposed of in a facility permitted by Ecology in the core zone of the Central Plateau. The core zone is an area reserved for the disposal of essentially all of the Hanford waste that will remain onsite. The impacts of disposing of waste in the core zone are being evaluated in accordance with the National Environmental Policy Act (NEPA). Moreover, performance analyses show that our LAW treatment and disposal approach is protective of human health and the environment. The NEPA process and the public outreach process will be used to provide opportunities for public involvement as we proceed in this matter.

2. Consolidated Waste Facility


You also alluded to “apparent disarray in current waste management strategies” and “more disposal sites.” While we are unclear as to what the disarray is you are referring to, we do know that we proposed the use of a single large disposal site for all Hanford waste to you a year ago as part of the Cleanup Challenges and Constraints Team (C3T) initiatives. We (all three agencies) have been working towards that end since that time via a variety of meetings, discussions, analyses, and workshops (including a very recent workshop). As you are aware, various locations for such a facility are being analyzed in the revised Draft Hanford Solid Waste Environmental Impact Statement. Resolution of regulatory issues between Ecology and U.S. Environmental Protection Agency (EPA) is key to the further consideration of this option. We are looking forward to presenting those analyses to the public this spring to support further agency decision making in this regard. Completing the NEPA process will be important for enabling such a decision, and we look forward to your further support for that process as we move forward.


3. Continued Use of Unlined Trenches

With respect to discontinuing use of unlined trenches in the near term and using existing, modern, safe facilities instead, we would again refer to the actions we proposed a year ago under the C3T initiative. We proposed then to begin disposal of 14,000 drums of remediation wastes in Environmental Restoration Disposal Facility. All the agencies agreed, but it has taken this long to coordinate a suitable Engineering Evaluation/Cost Analysis among the agencies to enable actual disposal to begin. We stand ready to take better advantage of such existing facilities for the disposal of low-level and low-level mixed wastes as rapidly as the regulatory processes will permit, and are open to any proposals you may have regarding current waste streams or categories (such as the wastes we proposed) that would be good candidates for near-term disposal.

We also agree we should meet to discuss your recommendations (and other matters) and believe that was a reason for the meeting already scheduled for the end of this month.

In closing, we remain committed to continuing cleanup activities using technically proven and cost effective methods that are fully protective of human health and the environment and compliant with applicable laws and regulations. We will continue to work with you to reach resolution on these and other issues and look forward to our upcoming meeting with you. As always, please feel free to contact either of us personally should you have any questions.


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