



HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

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US Environmental
Protection Agency
Washington State Dept.
of Ecology

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December 5, 2018

Theresa Kliczewski
U.S. Department of Energy
Office of Environmental Management
Office of Waste and Material Management (EM-4.2)
1000 Independence Avenue S.W.
Washington, D.C. 20585

Re: Federal Notice for the U.S. Department of Energy Interpretation of High-Level Radioactive Waste (2018-26319)

Dear Ms. Kliczewski,

The Hanford Advisory Board (HAB/Board) has been very concerned about potential impacts from the change to the U.S. Department of Energy Interpretation of High-Level Radioactive Waste as proposed in the Federal Register Notice published on October 10, 2018. Enclosed is advice regarding the U.S. Department of Energy Interpretation of High-Level Radioactive Waste drafted by the HAB's Tank Waste subcommittee. The attached advice was intended to move forward to the December 5, 2018 Hanford Advisory Board meeting for Board consensus approval in order to meet the public comment period deadline.

Due to the National Day of Mourning to honor Former President George H.W. Bush's passing, the Hanford Advisory Board December meeting was canceled. While we understand that the deadline has been extended through January 09, 2019, the Hanford Advisory Board will be unable to meet the deadline of the public comment period.

I am sending the attached advice as a comment on behalf of the Hanford Advisory Board. Although this is not a consensus product, the Tank Waste subcommittee has approved the attached document for full Board review and consideration.

The Hanford Advisory Board formally requests an extension of the public comment period until February 28, 2019. This extension would assist in ensuring the public's deeper understanding of decisions that may be impacted by this change.

Sincerely,

Susan Leckband, Chair
Hanford Advisory Board

Enclosure

cc: David Borak, Designated Federal Officer, U.S. Department of Energy, Headquarters
Doug Shoop, Manager, U.S. Department of Energy, Richland Operations Office
Brian Vance, Manager, U.S. Department of Energy, Office of River Protection
Alexandra Smith, Manager, Washington State Department of Ecology
David Einan, Manager, U.S. Environmental Protection Agency, Region 10
James Lynch, Deputy Designated Federal Officer, U.S. Department of Energy Office of River
Protection & Richland Operations
Kristen Holmes, Public Affairs Specialist, U.S. Department of Energy, Richland Operations
Washington & Oregon Delegations

On October 10th, the U.S. Department of Energy (DOE) posted a Federal Register notice¹ providing their interpretation of the definition of “High-Level Radioactive Waste” (HLW) as originally defined in the Nuclear Waste Policy Act of 1982 and subsequently adopted in amendments to the Atomic Energy Act of 1954. This interpretation seeks to designate new criteria by which a waste may be determined to be “non-high-level” (non-HLW), thereby allowing such waste to be disposed in a facility other than a deep geologic repository.

The Hanford Site contains several waste sources that are currently being managed as high-level waste. These wastes include the approximately 56 million gallons of HLW stored in underground storage tanks, reactor sludges, cesium and strontium capsules, and potentially other sources such as waste disposed in cribs and trenches and wastes that leaked from the HLW tanks. The final remediation and disposal decisions for these wastes could be affected by how HLW is defined. The definition of high-level waste is also important to the design of the Waste Treatment Plant, because the primary function of the pretreatment facility is to separate high-level waste from Low Activity Waste (i.e., “non-HLW”) into separate disposal pathways.

For over 35 years, the Atomic Energy Act and the Nuclear Waste Policy Act of 1982 established a source-based definition of High-Level Nuclear Waste (HLW).

HLW is defined as:

- (A) the highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and*
- (B) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.*

This definition of HLW considers both the process that created the waste as well as the hazard characteristics of the waste; however, ambiguity exists regarding the technical meaning of terms such as “highly radioactive” or “sufficient concentrations.”

Under the current system, wastes managed as HLW may be classified as “Waste Incidental to Reprocessing” (WIR) via one of two administrative pathways: the WIR process in DOE Order 435.1; or the process defined in Section 3116 of the National Defense Authorization Act of 2005. Legal uncertainty exists regarding whether DOE has the authority to make a WIR determination at Hanford under Order 435.1, following a legal challenge by a consortium of interested parties in 2003 which was voided in a 2004 ruling that the issue was “not yet ripe for judicial review.” The 3116 process currently only applies in the states of Idaho and South Carolina.

DOE’s proposed new interpretation of HLW defines “non-HLW” as waste that meets the following criteria:

- I. Does not exceed concentration limits for Class C low-level radioactive waste as set out in section 61.55 of title 10, Code of Federal Regulations; or*
- II. Does not require disposal in a deep geologic repository and meets the performance objectives of a disposal facility as demonstrated through a performance assessment conducted in accordance with applicable regulatory requirements.*

Under DOE’s interpretation, waste meeting either of these criteria is non-HLW. In other words, it is significant what’s in the waste, not where the waste came from. This interpretation would permit DOE to exclude some radioactive materials from the current requirement for disposal in a deep

¹ [Federal Register/ Vol. 83, No. 196/ Wednesday, October 10, 2018](#)

² 42 U.S.C. § 10101(12).

³ Atomic Energy Act of 1954 as amended 42 U.S.C. 2011 *et seq.*

geologic repository. This exclusion would be based on a determination by DOE that this radioactive material can meet the performance requirements of a different type of waste and therefore be disposed in near-surface burial.

The Hanford Advisory Board (HAB, Board) is concerned that the implementation of this interpretation could dramatically change the site's cleanup path forward, especially in terms of cost, schedule, and risk.

Additionally, the HAB has a number of concerns related to the implementation of this interpretation and believes that DOE should provide additional analysis on how the proposed interpretation of HLW would impact all potential high-level wastes at Hanford and other nuclear weapons complex sites around the country.

The Board is concerned about the reliance on a performance assessment (PA) in Criteria II. The Board believes that DOE needs to further clarify its interpretation of "performance assessment" and "applicable regulatory requirements." The Board would like to see a mechanism described which ensures that all PAs met the same high standards of technical rigor and are not self-defined. For example, some sites may ignore contamination in the soil beneath the discharge sites. Other sites may ignore lateral transport by ancient lake beds and only focus on vertical flow.

The Board is concerned that any performance assessment should utilize the same health-based cleanup standards as applied to DOE sites under CERCLA and State cleanup laws (ARARs). The HAB also believes that DOE needs to further define the role of the regulator under this interpretation and how and who will determine if the waste meets the waste classification criteria. The Board would like to see the definition require the involvement of an independent entity such as the NRC or some other agency such as the State Health Department, to ensure that the classification is appropriate and all PAs meet the same high standards for determining radiation dose to the public.

The Board advises the Department of Energy:

- To extend the public comment period for the Federal Register notice for an additional 120 days to allow adequate discussion with and among states that would be affected by a new HLW definition interpretation.
- To incorporate into the definition of "non-HLW" key provisions of the congressionally approved Waste Incidental to Reprocessing process in Section 3116 of the 2005 National Defense Authorization Act. These provisions include but not currently binding on the State of Washington:
 - a. Removal of key radionuclides to the maximum extent practical.
 - b. Compliance with the performance objectives in the Nuclear Regulatory Commission (NRC) regulations for low-level radioactive waste disposal facilities (10 CFR Part 61 Subpart C) can be met.
 - c. Disposal must be pursuant to a State-approved closure plan or State-issued permit, authority for the approval or issuance of which is conferred on the State outside of this section;
 - d. The Nuclear Regulatory Commission must provide consultation that the criteria for non-HLW be met on a case by case basis, and must be involved in ongoing long-term monitoring of non-HLW disposal.
- To include provisions in the HLW definition that involve the Nuclear Regulatory Commission, both the State in which the waste in question resides, and the State in which the waste would be dispositioned. DOE should not have unilateral authority to make non-HLW determinations.
- To provide an analysis of potential impacts to volume and risk of waste that may be left on site as a result of implementing this interpretation. This analysis should

include the cumulative risk on the Hanford site with the addition of waste to be reclassified as Low-Level or Low-Activity waste not previously destined for disposal at Hanford.

- To provide an analysis of how this non-HLW interpretation will impact Hanford's milestone/cleanup schedule.
- Any redefinition relating to wastes remaining on site, or relied upon for disposal in a near surface facility, rather than disposed in an independently regulated repository, should be subject to the requirements of CERCLA.