

KEY QUESTIONS AND ANSWERS REGARDING THE REINTERPRETATION OF HLW



FAQs

What is the current definition of HLW and why would DOE “interpret” the HLW definition? ?

The statutory definition for HLW is based on the Nuclear Waste Policy Act of 1982 and the Atomic Energy Act of 1954. These laws define HLW as:

- (A) The highly radioactive material resulting from the processing 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 (Nuclear Regulatory) Commission, consistent with existing law, determines by rule requires permanent isolation.

DOE is interpreting that some reprocessing wastes may be classified as non-HLW and may be disposed based on their radiological characteristics, rather than their origin. This is significant because, historically, DOE has conservatively managed most wastes resulting from reprocessing as HLW destined for geologic disposal in the federal HLW repository, based solely on their origin, using only the first paragraph of the definition. After decades of experience evaluating the actual radiological hazards posed by the wastes and the development of advanced waste forms and site-specific performance-based disposal strategies, DOE appears poised to remove the unneeded conservatism and define disposition paths that are technically defensible and implementable in the nearer-term.

This interpretation of the statutory HLW definition is consistent with the recommendations ECA its two publications examining the issue: **Waste Disposition: A New Approach to DOE’s Waste Management Must Be Pursued (September 2017)** and **Making Informed Decisions on DOE’s Proposed High Level Waste Definition (May 2019)**. It is also consistent with the IAEA’s activity-based waste classification scheme and safety standards used by other countries managing nuclear waste. That scheme calls for the specific types and properties of wastes to be taken into account when making disposal decisions.

OVERVIEW OF THE U.S. DEPARTMENT OF ENERGY’S (DOE) INTERPRETATION OF HIGH-LEVEL RADIOACTIVE WASTE

TIMELINE

October 10, 2018

The DOE EM Program published a request for public comment on their interpretation of the statutory definition for HLW [FR Vol 83, No 196].

December 4, 2018

DOE extends the public comment period to 90 days rather than 60.

January 9, 2019

Public comment period closes.

June 5, 2019

DOE publishes:

- Supplemental Notice Concerning U.S. DOE Interpretation of HLW
- Environmental Assessment for the Commercial Disposal of Defense Waste Processing Facility Recycle Wastewater from the Savannah River Site (NOI)

Why is DOE doing this now? What are the potential benefits?



As ECA has previously stated, there is a strong technical basis for the interpretation that DOE is now making. Careful implementation of this performance-based approach to disposition planning will enable significant near-term progress at DOE sites, overcoming barriers such as the decades-long delay in availability of the federal repository. Performance-based disposal strategies will enable acceleration over current cleanup baselines, save taxpayers money and allow DOE to focus on other high-risk priorities.

DOE outlines these and other benefits in the Supplemental Notice, including:

- Enhancing safety at DOE's sites by using lower complexity waste management approaches to reduce the risks of long-term storage and management;
- Reducing time at that untreated waste is stored on-site at DOE facilities;
- Furthering DOE's commitment to state and local communities to move radioactive material out of the generator state;
- Utilizing mature and available commercial facilities and capabilities to shorten mission completion schedules and reduce taxpayer financial liability.
- Aligning with international guidelines for management and disposal of radioactive waste based on radiological risk; and
- Establishing risk-informed disposal practices consistent with current regulatory requirements for low-level waste.

What role is there for local, state and Tribal governments or other impacted stakeholders?



In the supplemental notice, DOE notes its intent to engage with impacted stakeholders and comply with existing federal, state and local laws, regulations and agreements. DOE specifically states it “will not undertake any implementation actions without appropriate interactions with applicable federal, state and local agencies, and Native American governments.”

Paul Dabbar, Under Secretary of Energy for Science at DOE, echoed this in a recent opinion editorial in South Carolina, writing, “DOE will make no determinations about the application of this interpretation on any specific waste stream and its disposal without public involvement.”

How will DOE's interpretation impact disposition plans in the future?



DOE's Notice is directly relevant to the DOE sites that store large amounts of waste that is currently classified as HLW but would be considered non-HLW under this interpretation – Hanford, Idaho, Savannah River Site (SRS) and West Valley (WV) – and the potential receiver sites identified below. ECA can reasonably interpret that the waste streams to which this interpretation may apply are the vitrified canisters at SRS and WV, the sodium-bearing waste and calcine at Idaho and some Hanford tank wastes.



For more information, please visit ECA's web page at www.energyca.org

When will DOE apply its new interpretation?



As noted in the Supplemental notice, “subsequent action is required before the interpretation in this Supplemental Notice can be implemented.” In addition, “DOE has not made, and does not presently propose, any changes or revisions to current policies, legal requirements or agreements with respect to HLW.” For now, DOE plans to continue “managing all its reprocessing wastes as if they were HLW unless and until a specific waste is determined to be another category of waste based on technical assessments of its characteristics and an evaluation of potential disposal pathways.

Is there an estimate for potential cost savings?



ECA expects, based on previous DOE estimates, that over \$40 billion can be saved in avoided storage facilities and operations and these savings from current baseline costs can be reinvested to the advantage of all EM sites around the country.

Is DOE ultimately looking to treat all of this reprocessing waste the same way?



DOE asserts that “each reprocessing stream has unique radiological characteristics and...the interpretation will be implemented in subsequent actions on a site-specific basis, following consideration of:

- Evaluation and characterization of specific reprocessing waste streams in conjunction with the waste acceptance criteria and requirements of a specific waste disposal facility;
- Input from affected stakeholders (e.g., federal, state, local and Tribal officials; and members of the public); and
- Compliance with applicable federal and state laws, regulations, and agreements.”

What is DOE’s path forward?



The Supplemental Notice outlines a number of technical and regulatory steps (not listed in any particular order) that will inform the path forward:

- Identifying potential disposal facilities.
- Evaluating disposal facility waste acceptance criteria and impacts on performance objectives of the disposal facility.
- Coordinating with stakeholders.
- Preparing NEPA or CERCLA documentation, if needed, to retrieve, treat, package, characterize, and certify the wastes for disposal.
- Including a fiscal year budget request to plan for and/or execute disposal of the waste stream.
- Initiate project planning and execution activities in accordance with DOE Order 413.3B.
- Develop waste loading, packaging and transportation cask systems as needed to remove the waste from the site and deliver to the disposal facility.



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Is there support for this change outside of DOE?

ECA supports DOE in moving forward to evaluate alternative, risk-based disposal alternatives that can safely and more expeditiously move waste out of our communities.

As early as 2012, the Blue Ribbon Commission on America's Nuclear Future stated that the “most important overarching criticism of the U.S. waste classification system is that it is not sufficiently risk-based” and “the definition of HLW, in particular, has attracted the most criticism” and is considered “potentially problematic because the liquid waste stream from the front end of a reprocessing plant can have a broad range of characteristics—including characteristics that may be altered by time (decay) or by subsequent processing...The waste that remains after these changes, while still classified as HLW, may have characteristics similar to TRU waste or LLW.”

More recently, the directors of seven national laboratories expressed their support in a letter to DOE on May 25, 2019, that reads: ““Based on the perspective of the DOE’s Environmental Management National Laboratory Network, the HLW interpretation provides the best path to accelerating the safe long-term stabilization and disposition of a wide variety of reprocessing waste streams that exist across the DOE complex. The interpretation would provide immediate benefit to the health and safety of the worker, the surrounding communities, and the environment, and would establish consistent, risk-based approaches to the disposition of radioactive waste generated from the reprocessing of spent nuclear fuel. In short, we strongly support the HLW interpretation.”

In addition, staff from the Nuclear Regulatory Commission noted in their comments to DOE that they “agree with the concept... that radioactive waste may be classified and disposed of in accordance with its radiological characteristics.”

Is DOE doing a pilot program at the Savannah River Site?

Along with the Supplemental Notice, DOE also published its Environmental Assessment for the Commercial Disposal of Defense Waste Processing Facility Recycle Wastewater from the Savannah River Site (NOI). The NOI outlines the Department’s first step in determining whether and how to implement the interpretation specific to a particular waste stream – 10,000 gallons of stabilized (grouted) Defense Waste Processing Facility recycle wastewater from the Savannah River Site for disposal at a commercial disposal facility outside of the state.

DOE again adds, “DOE is not considering whether to implement the HLW interpretation at any other site or for any other waste stream.”

Can't DOE just add grout to waste as a means to reduce radioactivity and change waste classification?

No. The Supplemental Notice states, “Dilution of a waste stream to meet concentration limits is not permitted by DOE.”

It goes on to add: “Some types of stabilization (e.g., grouting), solidification, and or other treatment would result in reductions of radionuclide concentrations. However, this is not dilution if stabilization or solidification is required by disposal sites’ waste acceptance criteria to immobilize radioactive constituents and meet long-term performance objectives.”

How is this different from “Waste Incidental to Reprocessing” and “Tank Waste Determinations”?

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DOE’s interpretation is distinct from the “wastes incidental to reprocessing” and “tank waste determinations” made pursuant to authorities within DOE Order 435.1 and Section 3116 of the National Defense Authorization Act, respectively. DOE specifically states, “The HLW interpretation does not impact DOE’s intent and obligation to comply fully with Section 3116.”

DOE is not attempting to designate additional wastes as “incidental” to reprocessing. Rather, they are explicitly stating that some reprocessing wastes are not HLW because their radiological characteristics do not require geologic disposal. Specifically, their interpretation is that if reprocessing wastes do not exceed the statutory definition for Class C low level waste (LLW) in 10 CFR Part 61 or if reprocessing wastes meet the performance objectives of a disposal facility that is not a deep geologic repository as demonstrated by a regulatory-approved performance assessment, then the reprocessing wastes are not HLW and do not require geologic disposal.

It is also important to note that Section 3116 only applies to tank closures in Idaho and South Carolina, and even more specifically, Section 3116 does not apply to reprocessing waste that will be transported off-site and outside of Idaho and South Carolina, respectively.

In regards to DOE Order 435.1, DOE is not currently planning to modify it, but expects to re-examine issues that arise as it considers implementation of the new interpretation. DOE states, “...such examination will occur only with appropriate public engagement and full compliance with other legal obligations such as compliance with [NEPA].”

Which disposal sites are being considered under DOE’s new HLW interpretation?

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The disposal sites that DOE may consider utilizing for disposal of reprocessing wastes determined to not be HLW are those that have performance assessments demonstrating they can safely dispose of Class C LLW or even wastes that exceed Class C concentrations. Based on DOE’s prior analysis (the Greater Than Class C LLW Disposal Environmental Impact Statement) and other current regulatory information, these disposal facilities include the Waste Isolation Pilot Plant, Waste Control Specialists facilities in Texas, DOE’s Nevada National Security Site (NNSS) and certain on-site DOE disposal facilities, such as the Integrated Disposal Facility (IDF) at Hanford. While other commercial LLW disposal facilities can accept Class C LLW (Barnwell in SC and US Ecology in WA), they operate as Compact facilities (i.e., commercial facilities designated under the Low Level Waste Policy Act to receive commercial wastes from specific states defined by legal compacts), and DOE does not currently dispose of DOE wastes at these sites. Also, all DOE on-site disposal facilities operate under disposal authorization statements (similar to disposal licenses) that are based on site-specific performance assessments. Therefore, it is inappropriate to assume that all on-site DOE disposal facilities could accept reprocessing wastes subject to this interpretation.



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Is legislation necessary?



Despite the technical basis of DOE's interpretation, some stakeholder groups have identified that they may challenge this change through litigation. Legislation that codifies DOE's interpretation could: mitigate the risk of litigation, expedite resolution of any legal challenges, and institutionalize this approach so it is less vulnerable to change. However, legislation has its own process that may not lead to the desired solution.

MEDIA COVERAGE & OP-EDS OF INTEREST



Dabbar, P. (2019, June 13) | [The State](#)

Op-ed: DOE offers path to long-overdue progress at Savannah River.

Marra, J. and McLeod, R. (2019, June 18) | [Aiken Standard](#)

Letter: Interpreting the meaning of high-level waste.

World Nuclear News staff. (2019, June 7) | [World Nuclear News](#)

US DOE changes waste interpretation.

Croucher, S. (2019, June 6) | [Newsweek](#)

The Trump Administration Is Downgrading Toxic Nuclear Weapons Waste to Cut Disposal Costs—Should We Be Worried?

Cary, A. (2019, June 6) | [Tri-City Herald](#)

PNNL backs technical merits of fed's controversial new radioactive waste policy.

Fretwell, S. (2019, June 5) | [The State](#)

Feds offer to speed cleanup of SC's deadly nuclear waste. But plan isn't that simple.

Bernton, H. (2019, June 5) | [The Seattle Times](#)

New Trump administration rule intensifies clash over future of Hanford cleanup.

Vartabedian, B. (2019, June 5) | [Los Angeles Times](#)

Nuclear waste will be classified as safer under a controversial Trump administration change.



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