

DOE's Interpretation of the Definition of High-Level Radioactive Waste



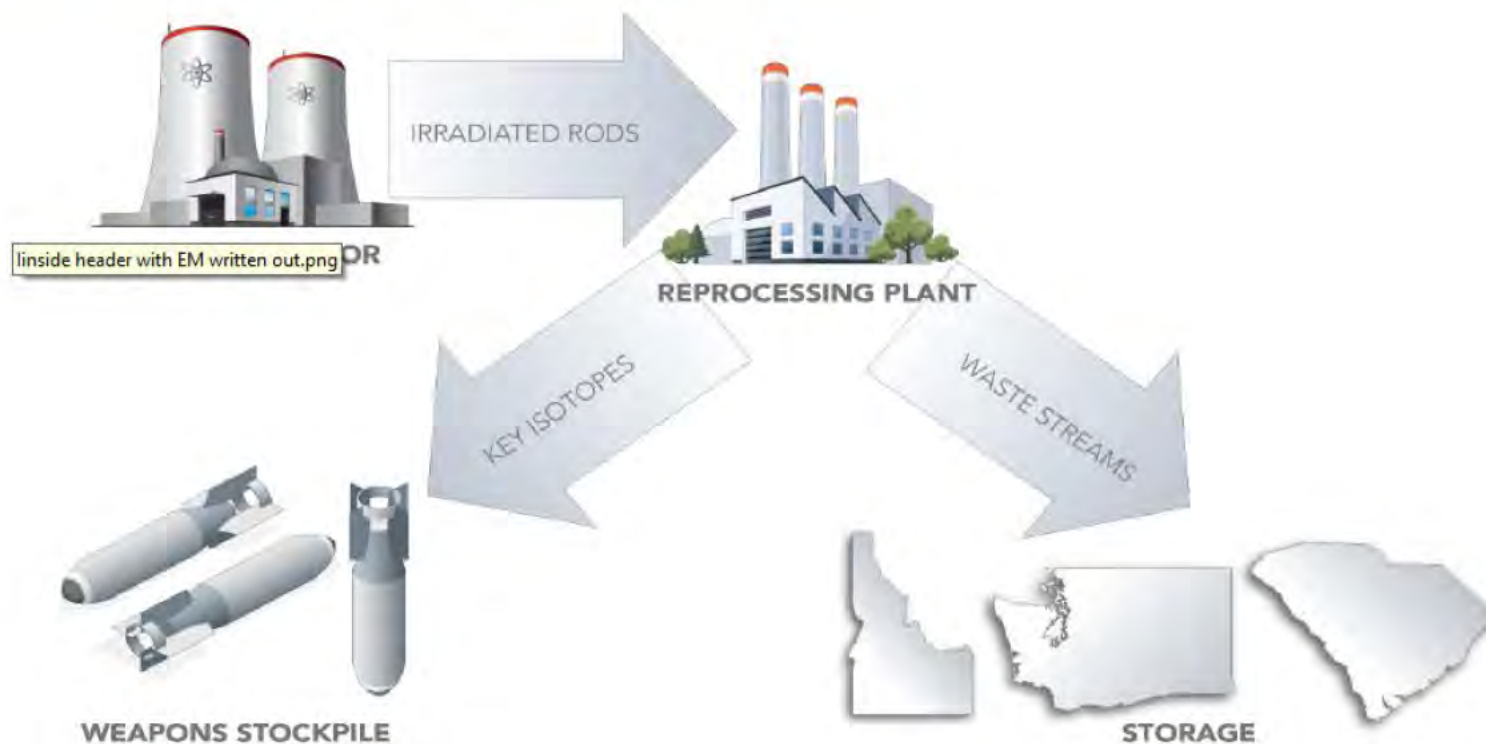
Office of Environmental Management

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Where Did This Waste Come From?

For national defense during the Cold War, the U.S. reprocessed used nuclear fuel rods to isolate key radioactive isotopes for our strategic weapons stockpile.

That reprocessing created varied radioactive waste byproducts like sludge, slurry, liquid, and debris that remain stored at DOE sites in South Carolina, Idaho, and Washington.



- October 10, 2018: DOE issued a Federal Register Notice (FRN) inviting the public to comment on the HLW interpretation.
- June 10, 2019: A Supplemental FRN was published providing the HLW interpretation and providing DOE's response to public comments.
 - HLW, as defined in the Atomic Energy Act of 1954, as amended, and the Nuclear Waste Policy Act of 1982, as amended, is properly interpreted to mean that not all radioactive wastes from nuclear fuel reprocessing are HLW, and that some reprocessing wastes can be classified as non-HLW based on the radiological characteristics of the waste.
- June 10, 2019: A second FRN was published to announce DOE's intent to prepare National Environmental Policy Act (NEPA) documents to analyze treatment and commercial disposal of up to 10,000-gallons of SRS Defense Waste Processing Facility recycle wastewater.

- The primary focus is to provide a safe and appropriate path forward to remove reprocessing waste for disposal from the states where it now resides.
- DOE's interpretation does not change or revise any current policies, legal requirements, or agreements.
- Decisions about how this interpretation will apply to existing wastes will be the subject of subsequent actions (e.g., NEPA, regulatory).
- DOE will work closely with local officials, regulators, and stakeholders where reprocessing waste is stored and where such waste might be disposed.
- NRC will maintain their current consultation role under 3116 and DOE Order 435.1, Radioactive Waste Management, Waste Incidental to Reprocessing (WIR) processes.
- The interpretation could apply to reprocessing waste at SRS, Hanford, and ID. The interpretation will not apply to West Valley reprocessing waste until and unless the HLW definition in the West Valley Demonstration Project Act changes or is deleted.

- It's the right thing to do environmentally and enhances worker safety at DOE sites.
 - Uses proven technology to treat and immobilize waste.
 - Accelerates the clean up of DOE sites which reduces the risks of long-term waste storage and management.
- Could provide DOE with a disposal path forward on reprocessing waste streams with no near-term disposition path: SRS, Hanford, and INL.
- Utilizes mature and available commercial facilities and capabilities to shorten mission completion schedules and reduce taxpayer financial liability.
- Aligns with international guidelines for management and disposal of radioactive waste based on radiological constituents.
- Consistent with current disposal practices and regulatory requirements for non-reprocessing low-level radioactive waste (LLW).

AEA & Nuclear Waste Policy Act of 1982, As Amended

- The AEA and NWPA define HLW 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.
- The terms “highly radioactive” and “sufficient concentrations” are not defined in the AEA or the NWPA. Congress left it to DOE to determine when the standards are met.

- DOE may determine that waste is not “highly radioactive” if the waste:
 - 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, **and meets the performance objectives of a disposal facility;**
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.
- Waste meeting either of these tests could be classified based on its radiological content and disposed of in accordance with disposal facility waste acceptance criteria, allowable radionuclide content, waste form and packaging requirements, and waste generator certifications and approvals.

1. DOE's HLW interpretation will:
 - Allow for safe disposal of reprocessing waste from the states where it now resides
 - Reduce risks to the public, workers and the environment
 - Accelerate waste removal
2. The HLW interpretation allows waste to be safely disposed of based on its physical characteristics and in compliance with performance objectives and other disposal facility requirements.
 - It's sound science & judgment
3. The HLW interpretation is the product of a careful and considered process:
 - Comments were invited during an extended 90-day period
 - 5,555 comments were received from public, lawmakers, tribes, state and local governments.
4. DOE will continue to ensure that waste is managed and disposed of safely, working with stakeholders including local officials, tribal governments, affected communities and regulators
5. Non-HLW determinations will be made on a case-by-case basis and with appropriate National Environmental Policy Act (NEPA) analysis before any final designation or disposal decision, with a focus on:
 - Transparency
 - Established regulatory processes
 - Public participation
 - Reducing risk to human health and the environment

6. The HLW interpretation is in accordance with all technical and regulatory standards, and:
 - Does not change long-standing DOE or Nuclear Regulatory Commission regulations.
 - Does require that all commercial and DOE disposal facilities continue meeting relevant safety rules.
7. The goal is to remove reprocessing waste from tanks.
 - Finding new disposition pathways out of state for lower-activity waste streams would reduce risk to the public, workers, and the environment
8. Support for the approach from independent organizations.
 - Experts and organizations, like the Massachusetts Institute of Technology and the Blue Ribbon Commission on America's Nuclear Future, recommend that a risk-based interpretation of HLW is the best approach.
9. It's time for the U.S. to align with International Atomic Energy Agency guidelines and best practices for waste management and disposal.
 - That means using a risk-based approach and defining waste primarily by its characteristics and radiological risks – not solely by its source. It's time to join our peers.
10. DOE's responsibilities will not change. Just as it has for decades, the Department will ensure that our nation's radioactive waste is safely treated, stored and disposed.

At the Savannah River Site, DOE manages certain reprocessing waste through the Defense Waste Processing Facility (DWPF).



DOE is preparing a NEPA analysis.

- If this material meets NRC standards for non-HLW disposal, DOE will safely treat and dispose of it in a licensed facility outside South Carolina.
- NEPA allows state, local, and tribal officials and the public to observe and comment on DOE's environmental analyses.
- At this time, DOE is only considering these 10,000 gallons for disposition under this interpretation.
- Any future determinations would require NEPA and include engagement with all appropriate stakeholders.



Questions?

For Additional Information Visit:

<https://www.energy.gov/em/high-level-radioactive-waste-hlw-interpretation>