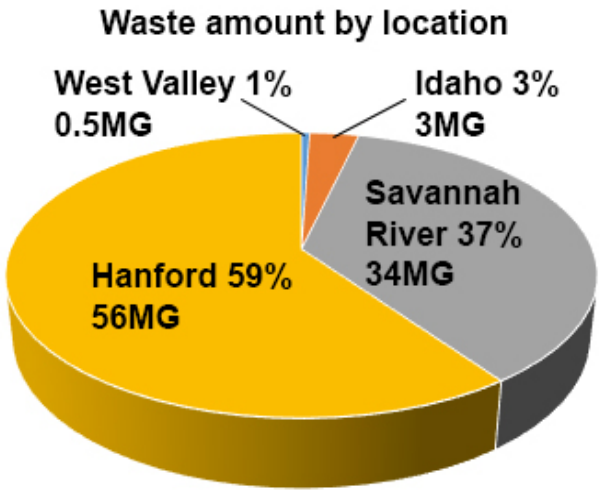
WHAT'S IN A NAME: REDEFINING HIGH-LEVEL WASTE

DEPARTMENT OF ECOLOGY
State of Washington

In 2019, the U.S. Department of Energy issued a new interpretive rule that gives it unilateral authority to reclassify high-level nuclear waste. This is contrary to existing ways to reclassify high level waste, which all require Nuclear Regulatory Commission review and state involvement. A plain reading of Energy's new interpretive rule indicates it could apply to the 56 million gallons of waste in Hanford's tanks.



This new rule concerns the state of Washington for a number of reasons.

- Energy could use it as the basis for treating waste using less protective concrete, rather than immobilizing it in glass.
- For the past 25 years, Energy has spent tens of billions of dollars building complex facilities intended to remove key radionuclides from the tank waste, separate it into high level and low activity streams, and immobilize it in glass. That taxpayer investment would be lost if Energy now changes how it approaches high level waste reclassification.
- Energy declined to exempt Hanford waste from the new rule when the state asked it to. Also this reclassification approach appeared as a key assumption in the 2020 Report to Congress "Evaluation of Potential Opportunities to Classify Certain Defense Nuclear Waste from Reprocessing as Other than High-Level Radioactive Waste"

High-level waste at Hanford

High level nuclear waste is defined as waste generated from the reprocessing of spent nuclear fuel. All of the waste in Hanford's 177 underground tanks is from the reprocessing of spent fuel rods, which were dissolved with chemicals to extract plutonium used to make bombs. Hanford's single and double shell tanks currently store 56 million gallons of high level mixed chemical and radioactive waste generated in this reprocessing.Governing law requires that high level waste be immobilized in glass and disposed of at a deep geologic repository. To reduce the amount of immobilized Hanford tank waste that would need to go to a deep geologic repository, in the 1990s Energy, the Nuclear Regulatory Commission and Ecology agreed that up to 90% of tank waste could be treated and disposed of at Hanford as something other than high level waste. However, this could only happen if Energy removed the key radionuclides in the waste to the maximum extent practicable, and immobilized the waste in glass. Energy's proposed re-interpretation threatens to disrupt this approach and override a long-standing federal commitment to treat any nuclear waste left in Washington state with a process that's "as good as glass."

Hanford's tank waste is about equally divided, a third liquid (supernate), a third crystallized salt cake, and a third sludge. Sludge holds the highest concentration of radioactivity, but radionuclides are present in all three waste forms.

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