

Draft Advice for Comment
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DOE Interpretation of non-High Level Waste (non-HLW)

To: ORP

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Background

For over 35 years, the Atomic Energy Commission ¹ and the Nuclear Waste Policy Act of 1982 as amended² established a source-based definition of High Level Nuclear Waste (HLW). As implemented by DOE Order 435.1³, HLW is defined as the “highly radioactive waste 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 other highly radioactive material that is determined, consistent with existing law, to require permanent isolation.”

Given this source-based definition, the HLW waste stored in underground storage tanks on the Hanford site currently represents two-thirds of America's HLW by volume or approximately 57 million gallons.

On October 4, 2018, DOE issued an interpretation of HLW that defined 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 and may be classified and disposed of in accordance with its radiological characteristics. This definition of

¹ Atomic Energy Act of 1954 as amended 42 U.S.C. 2011 *et seq.* This definition of HLW was first enacted in the Nuclear Waste Policy Act of 1982, as amended, and incorporated into the AEA in 1988. 42 U.S.C. 2011 *et seq.* This definition of HLW was first enacted in the Nuclear Waste Policy Act of 1982, as amended, and incorporated into the AEA in 1988.

² 42 U.S.C. 10101 *et seq.*

³ DOE M 435.1-1, Chapter II, High-Level Waste Requirements (Excerpted)

“high-level radioactive waste” should reflect not only the source of waste, e.g., from reprocessing, but also the relative hazard. Such a definition would permit regulatory agencies to exclude materials from “high level radioactive waste” that need not be disposed of in a repository because of low activity. In other words, it is significant what’s in the waste, not where the waste came from. This is an extremely important distinction at Hanford, where tank wastes are the product of multiple early reprocessing approaches, as well as, multiple campaigns that removed almost half of the fission products from Hanford tank wastes for use in research and commercial activities. The result is that a significant amount of the fission products in the Hanford tank wastes are contained in only a few of the 177 underground storage tanks.

Given this approach, it is estimated that only about one million gallons of the 57 million gallons of Hanford tank waste would still be considered as HLW. This action could dramatically change the site’s cleanup path forward, especially in terms of cost and schedule. With this definition of non-HLW, the site should be better able to utilize available technology and strategies meet the cost and schedule deadlines of the Tri-Party Agreement.

Advice

The Hanford Advisory Board strongly supports the recent DOE interpretation of the non-HLW definition to be reflective of the composition and risk of the material. Nuclear waste should be based on what the waste is verses where the waste came from. This is a step that has been many years in the making, and it could significant constructive impacts on the direction of numerous aspects of the Hanford mission.

Please direct comments to:

a) Email: Send comments to HLWnotice@em.doe.gov. Please submit comments in Microsoft™ Word, or PDF file format, and avoid the use of encryption.

b) Mail: Send to the following address: Theresa Kliczewski, U.S. Department of Energy, Office of Environmental Management, Office of Waste and Materials Management (EM-4.2), 1000 Independence Avenue, S.W., Washington, DC 20585.