



NYSERDA

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January 3, 2019

Ms. Theresa Kliczewski
U.S. Department of Energy, EM 4.2
Office of Environmental Management
Office of Waste and Materials Management
1000 Independence Avenue, SW
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By email only: HLWnotice@em.doe.gov

Subject: NYSERDA comments on DOE's proposal to interpret the statutory term "high-level radioactive waste" (HLW), as proposed in 83 FR 50909-11 (October 10, 2018)

Dear Ms. Kliczewski:

The New York State Energy Research and Development Authority is submitting the attached comments in response to the U.S. Department of Energy's request for public comment on its interpretation of the definition of the statutory term high-level radioactive waste.

Thank you for the opportunity to provide comments.

Sincerely,

Paul J. Bembia, Director
West Valley Site Management Program
NYS Energy Research and Development Authority

PJB/amd

Attachment:

1. "NYSERDA Comments on the U.S. Department of Energy's Request for Public Comment on Its Interpretation of the High-Level Radioactive Waste"

PJB/19amd001.amd

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NYSERDA Comments on the U.S. Department of Energy’s Request for Public Comment on its Interpretation of High- Level Radioactive Waste

I. Introduction

On October 10, 2018, the United States Department of Energy’s Office of Environmental Management issued in the Federal Register (FR) a “Request for Public Comment on the U.S. Department of Energy Interpretation of High-Level Radioactive Waste.”¹ The New York State Energy Research and Development Authority (NYSERDA) appreciates the opportunity to comment on the Department of Energy’s (DOE) proposed interpretation, to identify its impact on waste stored in New York, and to seek further clarification. NYSERDA’s point of contact for this submission is Paul Bembia, West Valley Program Director, 9030-B Route 219, West Valley, NY 14171, (716) 942-9951, paul.bembia@nyserda.ny.gov. NYSERDA owns, in trust for the People of the State of New York, the Western New York Nuclear Service Center (“West Valley”).

DOE is seeking input on a proposed interpretation of the term “high-level radioactive waste” (HLW) as set forth in the Atomic Energy Act of 1954 and the Nuclear Waste Policy Act of 1982 (NWPA). Specifically, DOE proposes to “interpret[] the statutory term such that some reprocessing wastes may be classified as not HLW (non-HLW) and may be disposed of in accordance with their radiological characteristics.” DOE proposes only an internal change in interpretation, and no change to existing statutory or regulatory language.

NYSERDA states at the outset that it does not and would not support any interpretation of the term “high-level waste” that could, or would, lead to the stranding of waste at West Valley. However, the implications of DOE’s proposed interpretation with respect to West Valley waste and the cost obligations of New York State and the federal government related to West Valley are unclear. NYSERDA identifies several issues here for further discussion: whether the interpretation could result in the stranding of additional “orphaned” waste at West Valley due to the uncertainty of West Valley waste’s eligibility for disposal at the Waste Isolation Pilot Project (WIPP) or other facilities;² the potential implications of DOE’s interpretation for the longstanding disagreement between New York State and the Department of Energy regarding whether the waste at West Valley is “defense” waste or not under the

¹ 83 Fed. Reg. 50909 (Oct. 10, 2018) (“the FR Notice”).

² As discussed below, NYSERDA recognizes that DOE recently issued an Environmental Assessment (EA) for the disposal of Greater Than Class C (GTCC) and GTCC-like waste, and this EA may provide a non-WIPP disposal path for West Valley TRU.

NWPA, and the consequent matter of responsibility for any fee associated with the disposal of the West Valley HLW; the intended application of the interpretation at each site and the possibility that the interpretation could be used to close the West Valley HLW tanks in place; and the informal mechanism by which DOE is attempting to enact a substantial change in longstanding federal waste management policy.

NYSERDA's observations about the proposed redefinition are discussed in more detail below.

II. Issues Pertaining to West Valley

A. Current Status of High-Level Waste at West Valley

West Valley houses 278 canisters of vitrified HLW waste and residual HLW contamination in four below-ground tanks. This formerly liquid waste resulted from Nuclear Fuel Services' six years of reprocessing, primarily, a baseload of material from atomic energy defense activities at the Hanford facility in the State of Washington.

As an initial matter, the FR Notice does not explicitly apply to the definition of HLW offered in the West Valley Demonstration Project Act; the FR Notice states that the interpretation applies only to the Atomic Energy Act and the Nuclear Waste Policy Act's terms. The term high-level radioactive waste is defined in the West Valley Demonstration Project Act as:

the high-level radioactive waste which was produced by the reprocessing at the [Western New York Nuclear Service] Center of spent nuclear fuel. Such term includes both liquid wastes which are produced directly in reprocessing, dry solid material derived from such liquid waste, and such other material as the Commission designates as high-level radioactive waste for purposes of protecting the public health and safety.

(Pub. L. 96-368). Therefore, if the DOE seeks to apply the interpretation to West Valley as it appears from other references in the FR Notice is intended, it must explicitly apply the interpretation to the waste produced by reprocessing at the Western New York Nuclear Service Center as well as the waste defined by the Atomic Energy Act and the Nuclear Waste Policy Act.

Currently, HLW is defined in the Atomic Energy Act of 1954 as amended,³ and Nuclear Waste Policy Act of 1982 (NWPA), as amended,⁴ as:

³ Public Law 83-703; 68 Stat. 919

⁴ Public Law 97-425; 96 Stat. 2201.

(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.

To date, the definition of HLW provided in paragraph (A) above has been interpreted as defining HLW based on origin, rather than on its radiological characteristics.

B. DOE's Proposed Interpretation

Under DOE's proposed interpretation presented in the October 10, 2018 Federal Register Notice (the "FR Notice"), waste meeting certain radiological criteria would be non-HLW, and therefore could be classified and disposed of in accordance with its radiological characteristics, rather than its origin. Those proposed criteria would include waste that:

- 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.

DOE states in the FR Notice that "[r]eprocessing waste meeting either I or II of the above is non-HLW, and may be classified and disposed in accordance with its radiological characteristics in an appropriate facility provided all applicable requirements of the disposal facility are met."

C. Application of the Interpretation Criteria to West Valley Waste

As it pertains to the canisters of waste currently categorized as HLW at West Valley, Criterion I of DOE's interpretation would not appear to impact their current classification. The waste in these 278 canisters exceeds the 10 CFR Part 61.55 Class C limits, and therefore would not be "non-HLW" under Criterion I of DOE's interpretation. However, it appears that Criterion II of DOE's interpretation could allow the 278 canisters of vitrified reprocessing waste at West Valley to be interpreted as "non-HLW" if there is a disposal facility in which the canisters could be disposed – that is, if the canisters meet a particular disposal facility's performance objectives as demonstrated through a performance assessment conducted in accordance with applicable regulatory requirements.

In the FR Notice, DOE states that under the interpretation, solid waste that exceeds the U.S. Nuclear Regulatory Commission's (NRC) Class C limits would be subject to detailed characterization and technical analysis of the radiological characteristics of the waste, and that this approach "...would be governed by the waste characterization and analysis process and performance objectives for the disposal facility established by the applicable regulator, and thereby protective of human health and the environment" (83 Fed. Reg. at 50911). DOE provides no further information or description of the approach for the conduct of the performance assessment needed to demonstrate whether the performance objectives would be met. Because the West Valley HLW could be dispositioned as non-HLW under the interpretation, it would be helpful to understand whether DOE intends to prepare performance assessments on a case-by-case basis for individual waste streams and disposal facilities, whether performance assessments will be prepared to identify maximum waste volumes and curie loading for a predetermined set of disposal facilities, or whether some other approach will be taken to prepare the needed analyses. NYSERDA also agrees with the West Valley Citizen Task Force that any such performance assessment needs to ensure that the performance assessment is both protective and traceable, such that the protectiveness can be verified by independent experts.

D. Potential Waste Disposal Implications

The FR Notice does not specifically address whether DOE intends that reprocessing waste that would be "non-HLW" under Criterion II would continue to be subject to restrictions for disposal based on characteristics of the waste such as the transuranic (TRU) element concentration or concentrations of other radionuclides that might exceed Class C waste limits. In other words, while a performance assessment under Criterion II may allow the waste to be classified as non-HLW, it is unclear to NYSERDA whether such waste would still be classified as TRU and restricted to disposal at WIPP, or classified as Greater-than-Class-C (GTCC), and restricted to disposal at a facility approved to accept GTCC or GTCC-like waste for disposal.⁵ According to the FR Notice:

Reprocessing waste meeting either I or II of the above is non-HLW and may be classified and disposed in accordance with its radiological characteristics in an appropriate facility provided all applicable requirements of the disposal facility are met.

⁵ DOE's 2016 *Final Environmental Impact Statement for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste* (DOE/EIS-0375) (GTCC FEIS) identifies disposal at WIPP or generic commercial facilities as the preferred alternative for the disposal of the nation's GTCC and GTCC-like waste. DOE refined its approach for GTCC and GTCC-like waste disposal in an *Environmental Assessment for the Disposal of Greater-Than-Class C (GTCC) Low-Level Radioactive Waste and GTCC-Like Waste at Waste Control Specialists, Andrews County, Texas* (DOE/EA-2082) (GTCC EA) issued in October 2018. The EA identifies a preferred alternative for disposal of the nation's entire GTCC and GTCC-like waste inventory in the Federal Waste Facility (FWF) at the Waste Control Specialists (WCS) disposal facility in Texas.

(83 Fed. Reg. 50911). Certain text in this paragraph (i.e., “provided all applicable requirements of the disposal facility are met”) suggests that the waste could continue to be subject to the disposal restrictions mentioned above. However, DOE also states in the FR Notice:

Accordingly, under DOE’s interpretation, solid waste that exceeds the NRC’s Class C limits would be subject to detailed characterization and technical analysis of the radiological characteristics of the waste. This, combined with the physical characteristics of a specific disposal facility and the method of disposal, would determine whether the facility could meet its performance objectives, and if the waste can be disposed of safely. This approach would be governed by the waste characterization and analysis process and performance objectives for the disposal facility established by the applicable regulator, and thereby protective of human health and the environment.

(83 Fed Reg. 50911). This paragraph could be read as limiting the applicability of the existing disposal site regulations to the requirements for the “waste characterization and analysis process” and the “performance objectives for the disposal facility.” DOE should clarify whether any “non-HLW” under Criterion II would continue to be restricted to disposal at WIPP or a GTCC disposal facility based on transuranic element and other radionuclide concentrations, or whether other facilities could accept the waste if the performance objectives for those other facilities were to be met with those wastes present. Without this information, it is not possible to understand the full range of disposal options that could become available for the West Valley reprocessing wastes under the interpretation.

E. Potential “Orphan Waste” and HLW Fee Implications

As DOE is aware, it is NYSERDA’s long-held position that the waste currently categorized as HLW and TRU at West Valley is of defense origin under the NWPA’s definitions, such that any fee associated with disposal of the HLW under the NWPA is a federal obligation. DOE’s FR Notice does not address the issue of DOE’s defense waste or commercial waste designations. It is important to note, however, that if the West Valley vitrified waste were determined to be “non-HLW” under Criterion II, the 278 canisters of West Valley reprocessing waste would still be TRU based on its transuranic element concentrations.⁶ Should DOE continue to advance its erroneous classification of the West Valley waste as non-defense “commercial waste,” it would appear that the 278 canisters of vitrified waste could be added to the inventory of TRU waste stranded at West Valley as “orphan waste” because of the defense waste-

⁶ NYSERDA staff have been advised by DOE West Valley staff that the transuranic element concentration of the vitrified waste is >100 nanocuries/gram of transuranic elements, which make them TRU. NYSERDA would seek confirmation of the interpretation’s impact on the canisters of vitrified waste from the Department as further discussions of this proposal move forward.

only restriction for the disposal of TRU at WIPP.⁷ While it seems highly unlikely that DOE would undertake an action that would create additional orphan TRU at West Valley, the FR Notice lacks specific information regarding the possible applications of the interpretation at each site. NYSERDA respectfully requests that DOE provide specific information on the intended application of the interpretation at each site, along with the expected changes in the cleanup and waste disposition framework that would result. NYSERDA does not support any interpretation of the term “high-level waste” that could, or would, strand additional waste at West Valley.

Furthermore, NYSERDA notes that DOE’s proposed interpretation could provide an opportunity for the resolution of the decades-long dispute between New York State and the federal government on the applicability of a fee for the disposal of West Valley HLW. The issue of the disposal fee for the West Valley HLW flows from the NWPA, which sets a fee structure for the disposal of defense and non-defense high-level waste. Under the DOE interpretation, if the West Valley HLW becomes non-HLW, the disposal fee would appear to no longer apply, since there would be no West Valley HLW to be disposed. The WVDP Act directs DOE to “dispose of TRU and LLW produced by the solidification of the high-level waste under the Project,” and the cost for disposal for Project LLW or TRU/GTCC-like waste would be governed by the cost responsibility framework provided in Consent Decree No. 06-CV-810 approved by the U.S. District Court for the Western District of New York in August 2010.

F. Use of the Interpretation for In-Place Closure of West Valley HLW Tanks

The Federal Register Notice provides no specific information on how DOE proposes to apply the HLW interpretation to each of the facilities that currently manage HLW (the West Valley Demonstration Project, Hanford Office of River Protection, Savannah River Site, and Idaho National Laboratory). Consequently, the possibilities for application of the interpretation may include the use of the interpretation as a path for the in-place closure of HLW tanks. NYSERDA recognizes that the NRC’s West Valley Policy Statement (67 FR 5003; February 1, 2002) contains a West Valley-specific process for preparing a determination of Waste Incidental to Reprocessing (WIR). NYSERDA raised objection to that document in its public comment phase, and will diligently evaluate any WIR analysis conducted for

⁷ NYSERDA notes, however, that the current and potential future inventory of West Valley TRU was evaluated for disposal by DOE in the GTCC FEIS and GTCC EA (in these documents, DOE identified the West Valley TRU as “GTCC-like waste” because DOE considers the West Valley TRU to be non-defense TRU). DOE’s proposed action in the GTCC EA is to dispose of the West Valley GTCC-like waste at WCS, which would create a disposal path for the West Valley TRU. While the vitrified waste at West Valley was not included in the inventory analyzed in the GTCC EA, it appears that the West Valley vitrified waste could be similarly disposed at WCS if the performance objectives of the WCS facility were met with the vitrified waste included, as demonstrated through a performance assessment.

West Valley waste as it is performed. NYSERDA requests that DOE clarify how, or whether, it will implement both the Policy Statement and the reinterpretation.

Additionally, in regard to the use of the interpretation for the in-place closure of the West Valley HLW tanks, we note that the West Valley HLW is a mixed hazardous and radioactive waste and is therefore subject to New York State Department of Environmental Conservation hazardous waste regulations, including the hazardous waste tank closure requirements (6 NYCRR 373-3.10). A determination under the HLW interpretation that the West Valley tanks are no longer HLW would not in any way change the status of the tanks as permitted hazardous waste management facilities, and as such, the New York State hazardous waste tank closure requirements would continue to apply to these tanks.

The lack of specific information on the intended application of the interpretation to the West Valley site also leaves open the possibility that DOE could propose to meet the first criterion of the HLW interpretation through the addition of grout to the tanks with the intent of concentration-averaging over the entire volume of the tank. In regard to such an approach, we note that it is unclear whether the tanks would meet the 10 CFR Part 61 concentration limits for Class C low-level radioactive waste even if concentration-averaged over the entire volume of the tanks. In addition, we note that the presence of the “bathtub ring” of radionuclides bound to the side of Tank 8D-2 and the likely presence of solid precipitates in Tanks 8D-1, 8D-2, and 8D-3 make it unlikely that the residual HLW would be blended throughout the entire volume of the grout, leaving layers, pockets or rings of HLW at the sides and bottom of the tanks rather than a blended, homogeneous waste form.

G. Lack of Regulatory Certainty

NYSERDA shares the concern of other commenters in regard to the use of an informal mechanism (a Federal Register Notice) to institute a substantive and fundamental change in U.S. high-level radioactive waste disposition policy that has stood for over 50 years. NYSERDA advocates for the promulgation of a regulation to capture this change to ensure it will be vetted in a transparent process and carry the weight of the rule of law so it can be clearly understood and relied upon by states, tribal governments, elected officials, and stakeholders across the country beyond this Administration.

III. Conclusion

In summary, NYSERDA does not support any interpretation of the term “high-level waste” that could, or would, strand additional waste at West Valley. NYSERDA also believes that the West Valley Demonstration Project could benefit from DOE’s proposed interpretation if the West Valley vitrified waste was determined to be non-HLW. These benefits include: (1) the possibility that DOE’s interpretation could create an accelerated path for the removal of the vitrified reprocessing waste from the WVDP site; and (2) the possibility that the interpretation could provide a path to resolve the decades-long dispute between New York State and the federal government regarding the applicability of a fee for the disposal of waste at West Valley currently categorized as HLW.

It is important to note that achieving point (1) above would hinge on the resolution of issues that are beyond the scope of DOE’s HLW interpretation, including the identification of a viable path for the disposal of the West Valley vitrified waste if it were determined to be non-HLW. If, for example, the vitrified waste was determined to be TRU waste rather than HLW, DOE’s position that West Valley TRU waste is “commercial” could actually strand the vitrified waste at West Valley along with other “orphan” TRU waste at the site because WIPP is limited today to accept only “defense” TRU waste. NYSERDA recognizes, however, that DOE’s recent EA on GTCC waste and GTCC-like waste could open a non-WIPP disposal path for West Valley TRU at the Federal Waste Facility at the WCS facility in Texas. NYSERDA also recognizes that before the WCS facility could accept West Valley TRU, actions by Congress, DOE, NRC and the State of Texas would be required.⁸ In addition, a performance assessment for the vitrified West Valley reprocessing waste would have to be prepared to show that the vitrified waste would be acceptable for disposal in the WCS Federal Waste Facility along with the other WVDP TRU that was evaluated in the GTCC EA.

The lack of specificity in the Federal Register Notice regarding the potential application of the interpretation raises the possibility that the interpretation could be used as a pathway to close the West Valley HLW tanks in place. NYSERDA notes that reclassification of the HLW tanks under the

⁸ NYSERDA recognizes that the GTCC EA represents a significant step toward opening a WCS disposal path for the West Valley TRU. As we understand it, the actions that must be undertaken to open this disposal path include: 1) Congress providing direction to DOE on the disposal of GTCC and GTCC-like waste as required by Section 631 of the Energy Policy Act of 2005; 2) DOE issuing a ROD on the GTCC EA; 3) NRC issuing a Regulatory Basis document on the disposal of GTCC in other than a deep geologic repository; and 4) the Texas Commission on Environmental Quality issuing a rulemaking that would change the State’s regulations to allow the disposal of GTCC LLW, GTCC-like waste, and TRU waste at the WCS FWF. While we support this effort to address the West Valley orphan TRU issue, the likelihood of success and timing for these four required actions is unclear. NYSERDA reiterates that the historic record shows that atomic energy defense activities, as defined in the NWSA, were conducted at the West Valley reprocessing plant. The historic record should be sufficient for DOE, on its own, to recognize the defense-origin of the West Valley wastes and open a disposal path for the West Valley TRU at WIPP.

interpretation would not change the status of the tanks as hazardous waste management facilities that must be closed in accordance with the New York State regulations for hazardous waste management facilities, and that DOE must clarify whether, and how, this reinterpretation can be applied in light of the application of the NRC Policy Statement's WIR process. In addition, the use of concentration averaging of radionuclide concentrations over the entire volume of the HLW tanks as part of the application of the interpretation would raise a number of concerns, including the inability to achieve a homogeneous, blended waste form.

NYSERDA believes that there are potential benefits to the WVDP that could be realized through the DOE HLW interpretation, and as such, supports and encourages further discussions with DOE on this matter. The process that will be used to evaluate the disposal of specific waste streams as possible non-HLW at specific facilities should be identified, as should the process for evaluating potential environmental impacts to states that might be receiving wastes for disposal under this interpretation, including transportation impacts. Finally, consideration should be given to formalizing this interpretation through incorporation in a law or regulation, and including a formal state consultation and approval process for states where wastes are proposed to be reclassified and states that would receive such reclassified wastes. The potential impacts of the interpretation are far reaching and substantial, and such a change must occur through a deliberate, inclusive process that involves all affected states, the NRC, Congress, the Seneca Nation and other affected Native American tribes, the West Valley Citizen Task Force and other stakeholder groups, and others.

NYSERDA appreciates the opportunity to submit comments on the DOE's proposed interpretation of the term "high-level radioactive waste," and looks forward to furthering dialogue on the subject.

Sincerely,

Paul Bembia, Director
West Valley Site Management Program
NYSERDA