

Stakeholder Engagement on the Very Low-Level Waste Scoping Study

On February 14, 2018, the U.S. Nuclear Regulatory Commission (NRC) staff issued a *Federal Register* (FR) notice (Volume 83 of the FR, page 6619 [83 FR 6619]) requesting public comments on the very low-level waste (VLLW) scoping study. The staff used these comments to identify possible options to improve and strengthen the NRC's regulatory framework for the disposal of the anticipated large volumes of VLLW associated with the decommissioning of nuclear power plants (NPPs) and materials sites as well as other activities. The staff conducted two public meetings to engage stakeholders. On February 22, 2018, the staff held a public meeting in Rockville, MD, to provide the public with an opportunity to comment on the scoping study. Stakeholders commenting at the meeting included representatives from States and compacts, NPPs, professional organizations, advocacy groups, the waste disposal industry, waste generators, and Federal agencies (the U.S. Environmental Protection Agency (EPA) and U.S. Department of Energy). The staff also held a public meeting in Phoenix, AZ, on March 23, 2018, which was similarly attended.

In the FR notice for the scoping study, the staff requested comments on nine topics:

(1) developing a VLLW regulatory definition, (2) creating a new waste classification category, (3) expanding existing guidance, (4) potential compatibility issues with Agreement States, (5) impacts to regional compact authorities, (6) relationship with EPA requirements for Resource Conservation and Recovery Act (RCRA) Subtitle C and D facilities, (7) unintended consequences, (8) analytical tools/methods used to assess risk of disposing VLLW, and (9) whether to include economic factors as part of the study. The agency received several hundred comments as a result of the public meetings and approximately 60 comment letters, and the staff reviewed and considered all of them. The staff organized the comment responses under five major comment themes (1) Defining VLLW, (2) New Waste Class and Possible Impacts, (3) Guidance Development, (4) Regional Compact Authority, and (5) Waste Analysis Requirements. The following summarizes the stakeholder responses to the questions in the context of each of these themes.

- (1) *Defining VLLW:* The United States does not have a formal regulatory definition of VLLW. What should the NRC consider in developing its own regulatory definition for VLLW? Is there another definition of VLLW that should be considered? How might defining VLLW affect Agreement State regulatory programs in terms of additional responsibilities or resources?

Commenters responded that (1) the NRC should proceed with a rulemaking to establish a definition for VLLW, (2) the creation of a new VLLW definition will adversely affect the financial stability of current disposal sites under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 61, "Licensing requirements for land disposal of radioactive waste," (3) there is adequate capacity to dispose of decommissioning wastes in the existing 10 CFR Part 61 disposal sites, and there is no need for a rulemaking given the existing regulatory framework provided by 10 CFR Part 61 and 10 CFR Part 20, "Standards for protection against radiation," (4) the NRC should align VLLW disposal with the International Atomic Energy Agency's standards in General Safety Guide No. GSG-1, "Classification of Radioactive Waste," issued 2009, (5) Agreement States should be allowed to decide whether or not to adopt the new VLLW definition, and (6) if a new VLLW disposal rule is adopted, the Agreement States would have to review licensee submittals for VLLW disposal, which would result in additional work and could increase the cost of maintaining a regulatory program.

The staff assessed these comments and found them to be diverse in both position and scope. Although there could be some benefit to defining VLLW within rulemaking (e.g., providing regulatory clarity on what constitutes VLLW), enough issues were raised and overall opposition expressed to any perceived relaxation of the VLLW disposal regulatory framework that staff to concluded significant resources would be necessary for an expected complex and high-visibility rulemaking, with only incremental safety benefits due to existing safe VLLW disposal options.

- (2) *New Waste Class and Possible Impacts:* The existing regulatory framework within 10 CFR 61.55, "Waste classification," divides low-level radioactive waste (LLRW) into four categories: Class A, Class B, Class C, and greater-than-Class C. Should the NRC revise the waste classification system to establish a new category for VLLW? What criteria should the NRC consider in establishing the boundary between Class A and VLLW categories? If the NRC were to create a new waste category for VLLW in 10 CFR Part 61, what potential compatibility issues related to the approval of VLLW disposal by Agreement States need to be considered and addressed? Are there any unintended consequences associated with developing a VLLW waste category? How should economic factors be considered in the VLLW scoping study?

Commenters responded that (1) if the NRC creates a new VLLW category in 10 CFR Part 61, it should be set at 10 percent of Class A limits for clarity and consistency, (2) it is not necessary for the NRC to create a new VLLW category in 10 CFR 61.55 as an addition to the existing LLRW regulatory structure, (3) if the NRC adds such a category, a disposal facility should have a site-specific performance assessment that considers the operating, design, and geological/climatological characteristics in order to meet dose criteria for the proposed waste acceptance criteria, (4) all VLLW waste should be buried in 10 CFR Part 61 disposal sites, not alternative disposal sites, due to the hazards of this waste, (5) allowing disposal of VLLW in RCRA facilities most likely will divert wastes from current LLRW facilities, which could impact the viability of those facilities and disposal capacity for Class A, B, and C LLRW, and (6) this approach might result in dual regulation between Federal and State regulators at VLLW or RCRA sites and cause increased costs.

The staff found that the comments related to defining a new waste category were similar to those for defining VLLW. In addition, commenters raised jurisdictional concerns as between the EPA and the NRC. These jurisdictional issues would require consideration in rulemaking, and add to the complexity of an already potentially resource intensive rulemaking process.

- (3) *Guidance Development:* The NRC's alternative disposal request guidance, "Review, Approval, and Documentation of Low-Activity Waste Disposals in Accordance with 10 CFR 20.2002 and 10 CR 40.13(a)," issued October 2017 and undergoing revision at the time of the FR notice,¹ allows for alternative disposal methods that differ from those already defined in the regulations and is most often used for burial of waste in hazardous or solid waste landfills permitted under RCRA. Should the NRC expand the existing guidance to include VLLW disposal or consider the development of a new guidance for VLLW disposal?

¹ In April 2020, the NRC revised and reissued this guidance as "Guidance for the Reviews of Proposed Disposal Procedures and Transfers of Radioactive Material under 10 CFR 20.2002 and 10 CFR 40.13(a)" (Agencywide Documents Access and Management System Accession No. ML18296A068).

Commenters responded that (1) the NRC should revise existing guidance primarily due to the significant volumes associated with VLLW (e.g., early NPP decommissioning, radiological event debris, and reprocessing), (2) the NRC should coordinate any guidance revisions with the EPA to address the potential for revising existing RCRA disposal guidance to ensure best management practices and risk-based considerations are addressed and implemented, and (3) there is no need to develop new guidance for VLLW because the existing rules in 10 CFR 20.2002 and 10 CFR 40.13(a), along with the relevant guidance that has been developed, are sufficient.

The staff considers its issuance of the 10 CFR 20.2002 alternative disposal request guidance an important step forward for VLLW management. It is important for the NRC to coordinate the development of important guidance with Agreement States, industry, and other stakeholders to ensure that the impacts of proposed changes are promptly identified and appropriately considered.

- (4) *Regional Compact Authority:* Following the Low-Level Radioactive Waste Policy Amendments Act of 1985, some States formed regional compacts for the disposal of LLRW. If the NRC were to create a new waste category for VLLW, does it fall within regional compact authority to control VLLW management and disposal? How might defining VLLW affect regional compacts in terms of additional responsibilities or resources?

Commenters responded that (1) because the compacts are incorporated into Federal law, any regulatory change to waste categories in 10 CFR Part 61 would not change compact authority and responsibilities over LLRW, and (2) it is important for the regulated community to understand that even if a facility is permitted to dispose of VLLW, if the facility is within a compact, the compact has sole discretion whether or not to allow the import of VLLW.

The staff agrees with the commenters that defining VLLW would not circumvent existing compact authority.

- (5) *Waste Analysis Requirements:* EPA-imposed waste analysis requirements for facilities that generate, treat, store, and dispose of hazardous wastes are defined in 40 CFR Parts 264 through 270. How would the NRC incorporate and apply waste analysis requirements for VLLW at RCRA Subtitle C and D facilities? Should the NRC impose concentration limits and/or treatment standards for VLLW disposal? What analytical methods/tools should be used to assess the risk of disposing of VLLW at licensed LLRW disposal facilities or RCRA Subtitle C and D facilities (i.e., generic or site specific)?

Commenters responded that (1) the NRC, not the States nor the EPA, should license any site disposing of VLLW, (2) the NRC should not impose additional waste analysis requirements, treatment standards, or concentration limits for VLLW that is codisposed with hazardous waste in a RCRA disposal unit, and (3) if the staff decides to move forward on allowing VLLW disposal in non-10 CFR Part 61 sites, the public health risk of disposing of VLLW should be estimated using performance-based methods incorporating site-specific data.

The staff acknowledges commenter responses that the introduction of a definition of VLLW or a new VLLW waste classification could introduce uncertainty in regulatory requirements and treatment between two Federal agencies and Agreement States.

Overall, the staff recognized the diverse comment responses, including general opposition to relaxation of the VLLW disposal regulatory framework. The staff considered these comments in the approaches it identified and evaluated in this paper. Overall, the evaluation of the comments supports the staff's selection of Approach 3.