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POLICY ISSUE (Notation Vote)

October 21, 2020

SECY-20-0098

FOR: The Commissioners

FROM: Margaret M. Doane
Executive Director for Operations

SUBJECT: PATH FORWARD AND RECOMMENDATIONS FOR CERTAIN
LOW-LEVEL RADIOACTIVE WASTE DISPOSAL RULEMAKINGS

PURPOSE:

The purpose of this paper is to provide considerations, options, and the staff's recommendation for proceeding with (1) the Part 61 of Title 10 of the *Code of Federal Regulations* (10 CFR) rulemaking, "Low-Level Radioactive Waste Disposal" (10 CFR Part 61 rule); and (2) a proposed rulemaking to promulgate requirements for the near-surface disposal of greater-than-Class C (GTCC) waste (hereafter referred to as the GTCC waste rulemaking) in a consolidated and integrated rulemaking.

SUMMARY:

The U.S. Nuclear Regulatory Commission (NRC) staff is currently implementing two Commission-directed rulemaking activities, which are in different stages: (1) the 10 CFR Part 61 rule, and (2) the GTCC waste regulatory basis. This paper describes how the staff plans to address the most recent Commission direction on the 10 CFR Part 61 draft final rule. For GTCC waste disposal, staff has completed development and issuance of a draft regulatory basis for public comment. The draft regulatory basis included the staff's preliminary conclusion

CONTACT: George Tartal, NMSS/REFS
301-415-0016

Cardelia H. Maupin, NMSS/DUWP
301-415-4127

Stephen Dembek, NMSS/DUWP
301-415-2342

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that most of the GTCC waste streams analyzed in the draft regulatory basis are potentially suitable for near-surface disposal and that most GTCC waste could be safely regulated by an Agreement State. After an analysis of the public comments received, staff has determined that this preliminary conclusion remains valid. The staff has identified and evaluated considerations and options for its path forward. As these two rulemaking efforts would both amend 10 CFR Part 61 and have related proposed requirements, the staff recommends they be consolidated and integrated into one proposed rule based on expected cost savings, consideration of stakeholder input, and efficiencies.

BACKGROUND:

The NRC promulgated its 10 CFR Part 61 regulations for the land disposal of low-level radioactive waste (LLRW) in 1982 (47 FR 57446; December 27, 1982). The 10 CFR Part 61 regulations were based, in part, on studies regarding the types of LLRW likely to go into a commercial disposal facility in the late 1970s and early 1980s. These assumptions, in turn, were based on a survey of LLRW generators at that time. The results of this survey ultimately formed the regulatory basis for the requirements in 10 CFR 61.55, "Waste classification." Section 61.55 categorizes LLRW into three principal classes, namely Class A, Class B, and Class C, based on their radiological hazard as determined by the concentration and type of radionuclides prescribed for each class. Class A waste is the least hazardous and Class C waste is the most hazardous that can be disposed of in a near-surface disposal facility. Those LLRW streams that contain radionuclide concentrations exceeding the limits for Class C waste constitute a fourth class of LLRW and are referred to as "greater-than-Class C" waste. Under the NRC's current regulations, GTCC waste is considered to be generally unacceptable for near-surface disposal and must be disposed of in a geologic repository unless the Commission approves, on a case-by-case basis, disposal of such waste in a disposal site licensed pursuant to 10 CFR Part 61.¹

The staff is currently implementing two Commission-directed activities that could result in amendments to 10 CFR Part 61: (1) a LLRW disposal rulemaking to address the disposal of waste streams (e.g., depleted uranium) that were not envisioned to be disposed of in significant quantities when 10 CFR Part 61 was originally promulgated in 1982, and (2) a GTCC waste rulemaking that would promulgate near-surface disposal requirements beyond the case-by-case approval currently authorized in 10 CFR Part 61. Additionally, as part of the direction related to GTCC waste, the Commission approved the staff's recommendation to amend the 10 CFR Part 61 definition of "waste" such that LLRW that is acceptable for disposal under 10 CFR Part 61 no longer excludes transuranic waste.

In SECY-13-0075, "Proposed Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61) (RIN-3150-AI92)," dated July 18, 2013 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML13128A160), the NRC staff provided the Commission with a proposed rule to amend 10 CFR Part 61. The purpose of the proposed rule was to address LLRW streams (e.g., depleted uranium) currently generated, or that have the potential to be generated, but were not considered when the 10 CFR Part 61 regulations were promulgated in 1982. Such LLRW streams are likely to emanate from commercial uranium enrichment facilities

¹ 10 CFR 61.55(a)(2)(iv).

and blended LLRW. These waste streams may contain large quantities of material near the upper bounds of the 10 CFR 61.55 waste classification system (i.e., at the Class C waste upper concentration limits in Tables 1 and 2 of 10 CFR 61.55) or different concentrations of constituents than those previously considered. The potential for LLRW streams to differ significantly in quantity and concentration from that initially considered by the 10 CFR Part 61 regulations warrants an update to the overall regulatory framework to ensure the protection of the public health and safety.

The Commission approved publication of the proposed 10 CFR Part 61 rule in a staff requirements memorandum (SRM), SRM-SECY-13-0075, dated February 12, 2014 (ADAMS Accession No. ML14043A371). The NRC published the proposed 10 CFR Part 61 rule for an initial 120-day comment period in the *Federal Register* (FR) on March 26, 2015 (80 FR 16081).²

In SECY-16-0106, “Final Rule: Low-Level Radioactive Waste Disposal (10 CFR Part 61) (RIN 3150-AI92),” dated September 15, 2016 (ADAMS Accession No. ML16188A290), the staff submitted a draft final 10 CFR Part 61 rule for Commission approval. In SRM-SECY-16-0106, dated September 8, 2017 (ADAMS Accession No. ML17251B147), the Commission directed the staff to make certain substantive revisions to the draft final rule and to publish it as a supplemental proposed rule for a 90-day public comment period.

The land disposal of GTCC waste, including near-surface disposal, is allowed on a case-by-case basis after Commission approval. The NRC currently has no specific technical safety and security requirements for such disposal.³ Developing a potential GTCC waste rulemaking was originally intended to follow the completion of the 10 CFR Part 61 rulemaking. A licensee would be subject to the physical protection program requirements in 10 CFR Part 37 (or Agreement State equivalent) and they may also be subject to 10 CFR Part 73 if they possess a Category III quantity of strategic special nuclear material (SSNM).⁴ To establish requirements for the near-surface disposal of GTCC waste as a matter of course, the NRC would need to revise its regulations. In September 2014, the Commission directed the staff to provide a historical perspective on GTCC waste disposal in SRM-M140918, “Briefing on Management of Low-Level Waste, High-Level Waste, and Spent Nuclear Fuel” (ADAMS Accession No. ML14267A365). Following this September 2014 Commission direction, on January 30, 2015, the Texas Commission on Environmental Quality (TCEQ) submitted a letter (ADAMS Accession No. ML15034A181) to the NRC staff regarding Texas’ authority to license the disposal of GTCC waste. In response to the Commission’s direction and TCEQ’s letter, the staff submitted SECY-15-0094, dated July 17, 2015 (ADAMS Accession No. ML15162A849), to provide the Commission with a historical perspective on the disposal of GTCC LLRW and to seek

² The public comment period closed on July 24, 2015. NRC reopened the comment period (80 FR 51964; August 27, 2015) in response to requests from the public; the reopened comment period closed on September 21, 2015.

³ The NRC’s current regulation, 10 CFR 61.55(a)(2)(iv), provides that the default disposal path for GTCC waste is disposal in a geologic repository. This regulation, however, allows for disposal in a 10 CFR Part 61 land disposal facility subject to the approval of the Commission.

⁴ Agreement State licensees are subject to the critical mass thresholds set forth in 10 CFR 150.11, “Critical mass.” Additionally, in accordance with 10 CFR 150.14, “Commission regulatory authority for physical protection,” “persons” in Agreement States “possessing, using or transporting special nuclear material” above the Category III SSNM critical mass thresholds must comply with the physical protection requirements of 10 CFR 73.67. The term “person” is broadly defined in 10 CFR 150.3.

Commission approval of the staff's recommendation to allow the State of Texas to license the disposal of GTCC waste.

In SRM-SECY-15-0094, dated December 22, 2015 (ADAMS Accession No. ML15356A623), the Commission directed the NRC staff to prepare a regulatory basis for the disposal of GTCC waste through means other than deep geologic disposal, including near-surface disposal, and to provide the regulatory basis to the Commission for information within six months of completing the 10 CFR Part 61 rule. The Commission further directed that the regulatory basis should analyze whether, in accordance with Section 274c.(4) of the Atomic Energy Act, of 1954, as amended (AEA), the disposal of GTCC waste presents a hazard such that the NRC should retain authority over its disposal. The Commission directed that, if the staff concluded that some or all GTCC waste is potentially suitable for near-surface disposal, the staff should then proceed to develop a proposed rule to include disposal criteria for licensing the disposal of such waste under 10 CFR Part 61. In addition, the Commission approved the staff's recommendation to address transuranic waste disposal in 10 CFR 61.2.

On October 23, 2018, in SRM-M181011 (ADAMS Accession No. ML18296A479), the Commission directed staff to decouple, to the extent practicable, the issuance of the draft GTCC waste regulatory basis directed in SRM-SECY-15-0094 from Commission action on the 10 CFR Part 61 rulemaking to allow for earlier public engagement on staff's analysis of any potential regulatory barriers to the disposal of GTCC waste.

DISCUSSION:

10 CFR Part 61 Rulemaking: Low Level Radioactive Waste Disposal (10 CFR Part 61 rule)

SRM-SECY-16-0106 directed staff to prepare a supplemental 10 CFR Part 61 proposed rule. The staff plans to address the Commission direction from SRM-SECY-16-0106 in the following ways:

- Reinstatement of the use of case-by-case basis (i.e., "grandfather provision") by only applying the new requirements to future sites or to existing facilities that will accept large quantities of depleted uranium in the future. Current sites that do not plan to dispose of large quantities of depleted uranium would continue to be governed by the current framework. The staff would define the term "large quantities of depleted uranium" to mean more than 10 metric tons of depleted uranium, or other quantity or concentration of depleted uranium as determined to be protective of public health and safety by the regulator on a case-by-case basis.
- Reinstatement of the 1,000-year compliance period while performing a qualitative analysis for beyond 1,000 years and apply the 1,000-year compliance period to the inadvertent intruder performance objective in 10 CFR 61.42 and the site stability performance objective in 10 CFR 61.44.
- Clarify that the safety case consists of the quantitative performance assessment, as supplemented by consideration of defense-in-depth measures.

- Narrow defense-in-depth consideration to solely providing additional assurance in mitigating the effects of large uncertainties that are identified during the performance assessment.
- Document, in a revised regulatory analysis, the results of the staff's public solicitation of stakeholder views on broader and more fully integrated, but reasonably foreseeable, costs and benefits to the U.S. waste disposal system resulting from the proposed rule changes, including pass-through costs to waste generators and processors.

Additionally, the NRC staff plans to incorporate a change to the 10 CFR Part 61 definition of "waste," as directed in SRM-SECY-15-0094, to address revisions in the definition resulting from the Low-Level Radioactive Waste Policy Amendments Act of 1985 (the Amendments Act). Specifically, the staff plans to propose the deletion of the term "transuranic waste" from the second sentence of the "waste" definition paragraph in 10 CFR 61.2. The effect of this change would be to include LLRW streams containing transuranic waste within the scope of 10 CFR Part 61.

Further, in accordance with direction from SRM-SECY-13-0001 (revised), "Staff Recommendations for Improving the Integration of the Ongoing 10 CFR Part 61 Rulemaking Initiatives," dated March 26, 2013 (ADAMS Accession No. ML13085A318), the staff plans to provide a Commissioner's Assistants (CA) note within 6 months of the completion of the 10 CFR Part 61 rulemaking effort to address the need for another rulemaking that would undertake a comprehensive revision to update the 10 CFR Part 61 waste classification framework.

GTCC Waste Rulemaking

Following the Commission direction in SRM-SECY-15-0094, staff proceeded with the development of a draft regulatory basis. As the 10 CFR Part 61 rulemaking has not been finalized, staff used the framework of the 10 CFR Part 61 draft final rule, supplemented by the Commission direction in SRM-SECY-16-0106, including provisions related to site-specific analysis and the intruder requirements, to evaluate the suitability of the waste that could potentially be disposed at a facility licensed to accept GTCC waste.

In a letter dated April 26, 2019, to NRC Chairman Svinicki and the Secretary of the U.S. Department of Energy Rick Perry (ADAMS Accession No. ML19121A544), State of Texas Governor Greg Abbott indicated that the Federal government should allow states with disposal sites for low-level radioactive waste to decide whether to accept GTCC waste. Governor Abbott also stated, "[a]t this time, I oppose any increase in the amount or concentration of radioactivity authorized for disposal at the facility in Andrews County, Texas."⁵ The Governor further noted that Texas was ready to work cooperatively with federal partners to safely manage the use and disposal of radioactive materials. On June 5, 2019 (ADAMS Accession No. ML19129A300), Chairman Svinicki responded to the Governor stating that once a regulatory basis is finalized, the NRC staff will develop a recommendation for the Commission regarding the need to proceed with rulemaking. The Chairman further stated that the rulemaking process would provide additional opportunities for participation by the State of Texas and other stakeholders,

⁵ Letter from Governor Greg Abbott, State of Texas, to Rick Perry, Secretary, U.S. Department of Energy, and Kristine Svinicki Chairman, U.S. Nuclear Regulatory Commission (April 26, 2019), at 1.

including a formal comment period, before promulgation of any changes to the existing regulations.

A draft regulatory basis, "Regulatory Basis for the Disposal of Greater-than-Class C (GTCC) and Transuranic (TRU) Waste," was issued for public comment on July 22, 2019 (84 FR 35037) (ADAMS Accession No. ML19059A403). On August 22, 2019, the staff held a public Webinar from NRC headquarters, followed by a public workshop on August 27, 2019, in Austin, Texas, to facilitate stakeholder engagement. The comment period, originally scheduled to end on September 20, 2019, was extended to November 19, 2019 (84 FR 48309), as a result of stakeholder requests. Based upon its generic evaluation of the hazards and other considerations, the NRC staff determined that most of the GTCC waste streams analyzed are potentially suitable for near-surface disposal (i.e., approximately 80 percent of the total volume of all GTCC waste), provided appropriate controls are implemented and a sufficient site-specific analysis is conducted to ensure protection to inadvertent intruders and offsite individuals. Site specific analyses and refinement in the waste stream inventories could also result in a differing quantity of GTCC waste potentially acceptable for near-surface disposal than was determined in NRC's generic analysis. Additionally, in response to the Commission's direction in SRM-SECY-15-0094, and in accordance with AEA Section 274c.(4), the staff determined that most GTCC waste could be safely regulated by an Agreement State (i.e., approximately 95 percent of the volume of GTCC waste determined to be potentially suitable for near-surface disposal). The one waste stream potentially suitable for near-surface disposal but not deemed suitable for Agreement State regulatory oversight is waste from a potential future facility for molybdenum-99 production. This waste stream was deemed not suitable for Agreement State regulation because of the likelihood the presence of this waste at a facility would exceed the critical mass threshold of 10 CFR 150.11. In addition, the NRC staff found another approximately 20 percent of the waste volume found suitable for near-surface disposal, if accepted by an Agreement State licensee, could subject that licensee to NRC regulatory oversight for purposes of 10 CFR 73.67 (physical security) compliance per 10 CFR 150.14 based on the quantity of SSNM.

The staff recognizes that there are two possible interpretations of the Amendments Act: (1) a strict or "plain language" interpretation that would allow for NRC licensing of a GTCC waste disposal facility only; and (2) a broad interpretation, based upon the Amendments Act's legislative history and construing the Amendments Act together with AEA Section 274, that would allow for a willing Agreement State to license such a facility. Both interpretations are legally valid. The staff, however, continues to support the recommendation it made in SECY-15-0094, namely, that the Commission should adopt the broad interpretation allowing for Agreement State licensing. The staff's recommendation is premised upon the Agreement State meeting all requirements of AEA Section 274, demonstrating that it has satisfied all requirements of the NRC's Agreement State program, and would be limited to licensing for disposal only those GTCC waste streams that the staff has deemed to be potentially suitable for near-surface disposal and that, in accordance with AEA Section 274c.(4), not present a hazard such that the NRC should retain authority over disposal.

Enclosure 1 provides an alternative view on whether GTCC waste can be regulated by an Agreement State.

The NRC received over 70 individual comment submissions from members of the public, environmental groups, industry stakeholders, a Tribal nation, various State agencies, and the U.S. Department of Energy (DOE), and approximately 7,000 form letters from environmental groups. Several commenters acknowledged the high quality of the regulatory basis document and technical analysis. DOE expressed concern regarding the use of generic analyses and assumptions and analyses to categorically exclude specific waste streams from near-surface disposal but supported the use of site-specific analyses for such determinations. Some commenters supported the near-surface disposal of GTCC waste, whereas the majority of public commenters stated that GTCC waste should only be disposed of in a deep geological repository. Some commenters, including the Organization of Agreement States, stated it would be more efficient for the NRC to combine the 10 CFR Part 61 and GTCC rulemaking activities, thereby allowing the Agreement States to conduct a single conforming rulemaking. Waste Control Specialists, LLC (WCS), the entity who expressed interest in disposing of GTCC waste, stated that the draft regulatory basis provides sufficient detail on actions an applicant must meet and provides a potential pathway for Agreement State licensing. WCS also noted that rulemaking may not be efficient if there is only one potential licensee. The dispositioning of stakeholder comments will be documented in the context of the proposed rule if the Commission directs GTCC rulemaking or in the final regulatory basis if the GTCC rulemaking is discontinued.

After consideration of the comments received from the public and various stakeholders, the NRC staff continues to view that (1) the potential suitability of GTCC waste for near-surface disposal would need to be demonstrated by the appropriate site-specific analyses for the proposed site, and (2) the NRC staff's generic analyses illustrated that most of the GTCC waste streams evaluated in the draft regulatory basis analyzed by the staff can have the potential to be safely disposed of in a land disposal facility licensed by an Agreement State. The NRC staff does acknowledge that, consistent with comments provided by DOE, the NRC's generic analyses do not represent a regulatory decision regarding the approval or disapproval of a specific site for disposal of GTCC waste. As there are no established standards or requirements for GTCC waste disposal under the current regulations, the review and evaluation of any application would be on a case-by-case basis. Site specific analyses and refinement in the waste stream inventories are important factors in determining whether or not any GTCC waste stream is acceptable for near-surface disposal.

The NRC would be the licensing agency for a land disposal facility that would accept GTCC waste for disposal if such a facility were to be located in either a non-Agreement State or in an Agreement State for which the NRC had not discontinued and relinquished to that State the regulatory authority for LLRW disposal pursuant to AEA Section 274b. Under the NRC's current regulation, 10 CFR 61.55(a)(2)(iv), there is a path forward for Agreement State licensing of a facility that can accept GTCC waste for disposal, provided the NRC has relinquished to that State the regulatory authority for LLRW disposal.⁶ Absent rulemaking, the Commission must

⁶ In 1981, the Commission issued a revision to its policy statement, "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement," to "allow states to enter into agreements for low level waste only, and to incorporate the provisions and requirements of the Uranium Mill Tailings Radiation Control Act of 1978," 46 FR 7540 (January 23, 1981). Through this policy, the Commission established low-level waste as a separate category of regulatory authority that could be relinquished to a State. Prior to the 1981 revision, the only recognized categories of regulatory authority were those listed in AEA Section 274b., namely, source material, byproduct material, and special nuclear material in quantities not sufficient to

first approve any such proposal given the current language of 10 CFR 61.55(a)(2)(iv), which requires that the Commission approve any alternative to the default disposal of GTCC waste in a geologic repository. As part of the Commission's determination, the staff would most likely have to perform an AEA Section 274c.(4) hazards analysis. Once the Commission approves of a land disposal alternative (in the near-surface or at an intermediate depth), then a duly authorized Agreement State would be able to license the facility, provided that the Agreement State program has been found to be both adequate and compatible with the NRC's Agreement State program objectives.

The draft regulatory basis recommended certain regulatory changes to NRC's requirements in 10 CFR Part 150, "Exemptions and continued regulatory authority in agreement states and in offshore waters under Section 274," to accommodate Agreement State regulatory oversight of most GTCC waste disposal without any dual regulation. However, under the Commission's 1979 final rule on the security of Category III quantities of SSNM, the agency stated such SSNM was subject to the Commission's interest in protecting the common defense and security. Under Section 274(m) of the AEA, such activities are reserved to the NRC and thus require dual regulation of this material (i.e., safety by the Agreement State and security by the NRC). Accordingly, certain GTCC waste streams containing Category III quantities of SSNM would require NRC oversight of security activities, absent an explicit Commission reconsideration of the basis for the 1979 final rule.⁷

If the Commission approves rulemaking to establish requirements for the near-surface disposal of GTCC waste, and following reconsideration of the 1979 final rule, if the Commission decides to accommodate Agreement State licensing of facilities that can accept GTCC waste for disposal, then the staff would recommend changes to certain 10 CFR Part 150 regulations as part of the GTCC waste rulemaking. As described in the staff's draft regulatory basis,⁸ these recommended changes include revising 10 CFR 150.14 and exploring regulatory approaches that would allow for a single regulator for an Agreement State licensee disposing of GTCC waste in a land disposal facility.

The potential for dual regulation arises if a "person" in an Agreement State, who holds an Agreement State license, possesses, uses, or transports a Category III quantity of SSNM, thereby triggering the requirement in 10 CFR 150.14 to comply with the physical protection requirements of 10 CFR 73.67, a regulation that can only be enforced by the NRC. Most likely, an Agreement State licensee would either need to obtain an NRC license or become subject to an NRC order, to allow for NRC oversight, inspection and enforcement of the 10 CFR 73.67

form a critical mass. The relinquishment of regulatory authority for LLRW disposals can be presumed to be included in all AEA Section 274b. agreements entered into prior to 1981, provided the NRC relinquished to that State the full extent of authority that may be relinquished under Section 274b. See SECY-15-0094, at 4.

⁷ The physical security provisions for the protection of Category III SSNM under 10 CFR 73.67 and the provisions of 10 CFR 150.14 (reserving activities subject to 10 CFR 73.67 to NRC oversight) were issued in a final rule titled "Safeguards Requirements for Special Nuclear Material of Moderate and Low Strategic Significance" (44 FR 43280; July 24, 1979). The final rule stated these provisions were being issued in the Commission's interest of assuring adequate protection of the common defense and security for such materials.

⁸ "Regulatory Basis for the Disposal of Greater-than-Class C (GTCC) and Transuranic (TRU) Waste" (July 2019), § 4.3.

requirements. Therefore, a potential rulemaking could explore appropriate requirements for the handling and disposal of such waste that could be regulated by an Agreement State.

Finally, the NRC can consider revising 10 CFR 150.15 by removing certain categories of persons in Agreement States from being subject to NRC licensing and regulatory requirements for the sole purpose of disposing of GTCC waste in a land disposal facility.⁹ These categories of persons would then be subject to Agreement State licensing. The categories of persons that would be removed from the categories listed in 10 CFR 150.15 are those persons who seek to store or dispose of GTCC waste resulting from the “separation in a production facility of special nuclear material from irradiated nuclear reactor fuel” (10 CFR 150.15(a)(4)) and those persons who seek to store or dispose of reactor-related GTCC waste (10 CFR 150.15(a)(8)).

Basis for approving GTCC Waste Rulemaking

Based on its evaluation of the draft regulatory basis, stakeholder comments, and rulemaking regulatory process considerations, the staff recommends conducting a rulemaking on GTCC waste disposal for these reasons:

- The staff has concluded that most GTCC waste streams analyzed in the draft regulatory basis are potentially suitable for near-surface disposal. Given the appropriate site-specific characteristics, these waste streams could potentially be safely regulated by an Agreement State.
- A rulemaking to provide improved clarity and consistency in the requirements would provide applicants for the near-surface disposal of GTCC waste with greater regulatory certainty than the current case-by-case process under 10 CFR 61.55(a)(2)(iv).
- Although the staff has historically found that GTCC waste is being stored safely, the NRC considers waste disposal as the safest and most secure long-term LLRW management approach.¹⁰ This rule potentially could make acceptable disposal pathways available sooner than the current, default geological repository pathway.

Overview of a Potential GTCC Waste Rulemaking

Any rulemaking authorizing the near-surface disposal of GTCC waste would need to include requirements for radiological protection during the facility’s operational period and after the closure of the disposal facility; these requirements would be to protect both inadvertent intruders and offsite individuals. The rule also would need to address regulatory concerns such as Agreement State licensing and the control of special nuclear material during operations.

⁹ The recommended changes to 10 CFR 150.14 and 150.15 related to GTCC waste disposal would also pertain to those activities preceding the disposal of the GTCC waste, including the transportation of the GTCC waste to the land disposal facility, the receipt of the GTCC waste by the licensee, and any storage pending disposal.

¹⁰ See the Policy Statement of the U.S. Nuclear Regulatory Commission on Low-Level Radioactive Waste Management and Volume Reduction, (77 FR 25760), dated May 1, 2012, (ADAMS Accession No. ML15023A098).

In the draft regulatory basis, the staff provided an overview of potential impacts and revisions to 10 CFR Part 61 that would be needed for consideration of near-surface disposal of GTCC wastes. In developing a proposed rule, the staff would consider:

- Requiring applicants to submit a site-specific analysis showing that the performance criteria in Subpart C, “Performance Objectives,” of 10 CFR Part 61 would be met for any GTCC wastes being considered for near-surface disposal (the staff would expect to impose requirements essentially identical to those currently proposed in the 10 CFR Part 61 rulemaking).
- Requiring GTCC wastes to be disposed of at a minimum depth of 5 meters below the surface of the earth *and* with a 500-year intruder barrier in place.
- Amending 10 CFR 61.55(a)(2)(iv) to delete the requirement that GTCC waste must be disposed of in a geologic repository as defined in 10 CFR Part 60 or 63.
- Exploring regulatory approaches that would allow for a single regulator for an Agreement State licensee disposing of GTCC waste in a land disposal facility, including potential amendment to 10 CFR 150.14 and 150.15.

Options for Path Forward for the GTCC and 10 CFR Part 61 Waste Rulemakings

Based on the above discussion, staff has identified the following options: Option 1 (preferred) – issue a re-proposed rule that consolidates and integrates the GTCC waste and 10 CFR Part 61 rulemaking activities, and Option 2 – discontinue the GTCC waste rulemaking and complete the 10 CFR Part 61 rulemaking.

Option 1: Issue a re-proposed rule that consolidates and integrates GTCC waste and 10 CFR Part 61 LLRW rulemaking activities

Under this option, the staff would conduct a rulemaking effort that consolidates and integrates GTCC waste and 10 CFR Part 61 rulemakings and implements the basis for the GTCC waste rulemaking discussed above.

The staff recommends issuing a new proposed rule that would include the scope of the 10 CFR Part 61 rule and its associated guidance, in combination with the scope of the GTCC waste rulemaking. The staff recommends to “re-propose” the rule because of the significant additional regulatory changes associated with the GTCC waste rulemaking that members of the public have not yet had an opportunity to comment on, and the substantive revisions to the 10 CFR Part 61 rulemaking that were directed by the Commission in SRM-SECY-16-0106. This approach would allow the agency to be able to clearly explain to the public its updated proposal within the context of all changes to the requirements. Stakeholders will be able to review and comment on the entire updated proposal at one time without having to reference other earlier documents, such as the NRC’s proposed 10 CFR Part 61 rule that was published in March 2015. The staff would be able to evaluate and address public and other stakeholder comments within the context of the new proposal.

This effort would effectively coordinate internal processes and require fewer resources than conducting separate rulemakings (see Enclosure 2 for detailed resource estimates). Specific areas of consideration are discussed below.

- 1) Overlapping Technical Requirements – The staff relied upon and imported technical concepts and methodologies from the 10 CFR Part 61 proposed rule into the GTCC regulatory basis, as appropriate. The two rulemakings have several areas of overlapping requirements, including site specific analyses, inadvertent intruder assessments, and performance assessments.
- 2) Resource Savings – Staff expects to save resources by consolidating the rulemakings; staff would develop and coordinate Commission review of one rulemaking package for the re-proposed rule, and one package for the final rule.
- 3) Enhanced Coordination – Pursuing one integrated rulemaking effort on the same part in 10 CFR would facilitate better use of staff resources and improve external coordination with other agencies, particularly, the Office of Management and Budget (OMB), as OMB will only review one rule affecting a 10 CFR part at a time.
- 4) Streamlined Stakeholder Outreach – An integrated rulemaking would facilitate communications and outreach with stakeholders. Specifically, re-proposing the 10 CFR Part 61 rule would provide clarity on the interface between the 10 CFR Part 61 and GTCC waste requirements, making it more straightforward for stakeholders to review and provide comment. An integrated rulemaking would provide the basis for a sound consideration of the cumulative effects of regulation and conserve stakeholder, industry, and Agreement States resources.
- 5) Schedule – The staff expects consolidating the rulemaking activities will involve a modest amount of additional time to complete the 10 CFR Part 61 rulemaking in order to provide for:
 - 1) Commission review of staff's proposal to integrate and issue a re-proposed rule; and
 - 2) additional Agreement State interaction on the GTCC waste aspects (approximately 2 months). Staff believes there is no significant disadvantage to the longer time frame because operating sites are already effectively meeting what would be the safety requirements proposed in the 10 CFR Part 61 rule.

The risk of this option would be spending time and resources to pursue rulemaking for GTCC waste, when there may be only a limited number of potential applicants. Option 1 mitigates this risk by limiting the additional resources needed to implement the GTCC rulemaking by consolidating and integrating it with the existing 10 CFR Part 61 rulemaking effort, as discussed above.

Option 2: Discontinuation of the GTCC waste rulemaking and completion of 10 CFR Part 61 rulemaking

Under this option, the staff would discontinue the GTCC waste rulemaking because:

- The current regulation, 10 CFR 61.55(a)(2)(iv), allows for the consideration of near-surface disposal through Commission approval on a case-by-case basis. Further, it is not certain that the NRC will receive an application for a license for the near-surface disposal of GTCC wastes. The staff expects that only one of the existing LLRW disposal facilities would express interest in accepting and disposing of GTCC waste because of the comparably small volume of GTCC waste that has been or is expected to be generated.
- There are some stakeholders who oppose this rulemaking and believe that the primary pathway for GTCC waste disposal should continue to be a geological repository because this pathway would provide a higher level of safety for GTCC wastes, which include long-lived radionuclides in greater concentrations than the LLRW currently authorized for near-surface disposal.

Without the GTCC waste rulemaking, any approval or licensing of GTCC waste disposal would be done on a case-by-case basis as provided in the current regulation, 10 CFR 61.55(a)(2)(iv). Under the NRC's current regulation, 10 CFR 61.55(a)(2)(iv), there is a path forward for Agreement State licensing of a facility that can accept GTCC waste for disposal, provided the NRC has relinquished to that State the regulatory authority for LLRW disposal. Absent rulemaking, the Commission must first approve any such proposal given the current language of 10 CFR 61.55(a)(2)(iv), which requires that the Commission approve any alternative to the default disposal of GTCC waste in a geologic repository. Once the Commission approves of a land disposal alternative (in the near-surface or at an intermediate depth), then a duly authorized Agreement State would be able to license the facility, provided that the Agreement State program has been found to be both adequate and compatible with the NRC's Agreement State program objectives.

If the Commission votes to discontinue the GTCC waste rulemaking, the staff would then proceed with the 10 CFR Part 61 rulemaking activities. The NRC regulations should be updated to address the current and potential disposals in low-level waste facilities that were not anticipated when 10 CFR Part 61 was first promulgated in 1982, as there remains a technical and safety basis to go forward with the 10 CFR Part 61 rulemaking.

Discontinuing the GTCC waste rulemaking would result in resource savings (shown in Enclosure 2), which could be re-allocated to higher-priority activities. As part of the discontinuation process, the staff would finalize the GTCC waste draft regulatory basis, with appropriate consideration of public comments, so it could be used to support potential future rulemaking efforts, if needed.

Under Option 2, the staff is proposing two sub-options for completing the 10 CFR Part 61 rulemaking. For Options 2a and 2b presented below, the staff expects either option would require approximately the same level of resources.

Option 2a. Issue a Supplemental 10 CFR Part 61 Proposed Rule

In accordance with direction from SRM-SECY-16-0106, the staff would make those directed revisions to the 10 CFR Part 61 draft final rule and publish those revisions as a supplemental

proposed rule for public comment. A supplemental proposed rule is intended to provide members of the public an opportunity to comment on NRC's changes to the proposed rule, which was previously published in the *Federal Register* in March 2015. As such, under this process, the public would be limited to only commenting on those changes necessary to address the SRM directed changes on the draft final rule, which was not subject to public comment. Any additional changes associated with addressing the public comments on the original proposed rule, if outside of the specific SRM direction, would not be subject to additional public comment. To understand the full context and extent of changes to 10 CFR Part 61, stakeholders would likely need to review the original proposed rule, the draft final rule, and the supplemental proposed rule.

The staff would submit the supplemental proposed rule to the Commission for review and approval. The staff expects that it would take approximately 12 months to develop a supplemental proposed rule.

Option 2b. Issue a 10 CFR Part 61 Re-Proposed Rule

The other option staff has identified is re-proposing the 10 CFR Part 61 rule, and associated guidance, in its entirety for public comment. The re-proposed rule would address Commission-directed changes in SRM-SECY-16-0106, along with the additional changes the staff had included in the draft final rule. The changes needed from the original proposed rule are substantive and affect a significant portion of its scope. The approach of issuing a re-proposed rule would allow the public to comment on the full contents and scope of the changes. This approach would also allow stakeholders who did not comment on the 2015 proposed rule to have an opportunity to comment on the entire rule now, based on updated information.

The staff would submit the re-proposed rule to the Commission for review and approval. The staff expects that development of a re-proposed rule would also take approximately 12 months. If the Commission chooses Option 2, the staff recommends Option 2b to facilitate clearer and more comprehensive stakeholder review without any additional resource needs.

COMMITMENT:

If the Commission approves Option 1, staff will:

1. Submit the re-proposed rule that consolidates and integrates GTCC waste and 10 CFR Part 61 LLRW rulemaking activities, and associated guidance documents, to the Commission within 14 months from the receipt of an SRM.
2. Submit the final rule to the Commission for approval within 12 months of the close of the comment period for the re-proposed rule.
3. Seek opportunities to communicate to external stakeholders the planned path forward.

4. Engage the active participation of Agreement State representatives during the development process, which is reflected in the time estimates.

RECOMMENDATION:

Consistent with the Commission's direction in SRM-SECY-15-0094, the staff has concluded that most of the GTCC waste streams it evaluated in the draft regulatory basis are potentially suitable for near-surface disposal. As further directed by SRM-SECY-15-0094, the staff has analyzed whether, in accordance with AEA Section 274c.(4), the disposal of GTCC waste presents a hazard such that the NRC should retain authority over its disposal. In this regard, the staff has concluded that most of the GTCC waste streams potentially suitable for near-surface disposal do not present a hazard such that the NRC should retain disposal authority. Based on these conclusions and consistent with the Commission's direction in SRM-SECY-15-0094, the staff recommends that the Commission approve Option 1 to issue a re-proposed rule that consolidates and integrates criteria for licensing the disposal of GTCC waste and 10 CFR Part 61 LLRW rulemaking activities, and provides for Agreement State licensing of those GTCC waste streams that meet the regulatory requirements for near-surface disposal and not presenting a hazard such that NRC should retain disposal authority. Additionally, for GTCC waste streams containing SSNM, the staff recommends exploring regulatory approaches that would allow for a single regulator for an Agreement State licensee disposing of GTCC waste in a land disposal facility, including potential amendment to 10 CFR 150.14 and 150.15.

Enclosure 1 to this paper includes alternative views that the federal government, and the NRC for civilian waste, must license any low-level waste facility accepting GTCC waste. The Executive Director for Operations and the Deputy Executive Director for Operations for Materials, Waste, Research, State, Tribal, Compliance, Administration, and Human Capital Programs as well as the Executives in the Office of Nuclear Materials Safety and Safeguards met with staff that filed the alternative views. We find these views to be compelling but not dispositive of the issues for the following reasons.

This paper is largely focused on the health, safety and environmental considerations of disposing of waste in a licensed low-level waste, near-surface facility, rather than a deep geologic repository. This question was previously left unresolved and now having considered the characteristics of the waste, from a technical perspective, the staff finds that a portion of the waste characterized as GTCC waste, possibly can be safely and securely disposed of in a near-surface, low-level waste facility. Importantly, the staff also finds that from a health and safety matter this material is not so hazardous that it requires exclusive federal jurisdiction as contemplated under AEA Section 274c(4). Finally, the Office of the General Counsel reviewed all the new information in this paper, including the alternative views, and concluded that as a legal matter, the Amendments Act can be read to support the recommended option.

Accordingly, the staff finds that as a policy matter, the better view is that surface disposal is best handled in a consistent manner. GTCC waste, like other low-level waste not requiring exclusive federal jurisdiction from a safety or security perspective, should be eligible for the NRC Agreement State program. This decision would also not affect the NRC's responsibility over the national materials program to develop safety and security regulations, and compatibility

standards for this material. Further, any GTCC waste requiring deep geologic disposal would remain a federal responsibility consistent with the NRC's jurisdiction to license a deep geologic repository for high level waste.

We very much appreciate the alternative staff view and feel that it has contributed to a thorough consideration of this matter.

RESOURCES:

Enclosure 2 (non-public) provides a detailed breakdown of current budgeted resources for the 10 CFR Part 61 and GTCC waste rulemakings, as well as estimated resources for both Options 1 and 2. Resources to support the 10 CFR Part 61 and GTCC waste rulemakings are included in the fiscal year (FY) 2021 President's Budget. Resources for FY 2022 and beyond would be addressed through the planning, budget, and performance management (PBPM) process. If the Commission approves Option 1 to conduct a consolidated rulemaking, staff would reallocate the surplus resources through the PBPM process.

COORDINATION:

The Office of the General Counsel (OGC) reviewed this package and has no legal objection (NLO) to this SECY paper and to enclosure 2. As a differing views statement, enclosure 1 is not encompassed within OGC's NLO review.

The Office of the Chief Financial Officer reviewed this package and determined that it has no financial impact other than those identified in the resource enclosure.

Margaret M. Doane

Margaret M. Doane
Executive Director
for Operations

Digitally signed by Margaret M.
Doane
Date: 2020.10.21 18:14:20 -04'00'

Enclosures:

1. Differing Views on Agreement State
Regulation of GTCC Waste Disposal
2. Resources (non-public)

**SUBJECT: PATH FORWARD AND RECOMMENDATIONS FOR CERTAIN LOW-LEVEL
WASTE DISPOSAL RULEMAKINGS DATED October 21, 2020**

**ADAMS Accession Nos.: Package: ML20143A164; SECY Paper: ML20143A165;
Enclosure 1: ML20143A166; Enclosure 2: ML20143A167 (OUO-SENSITIVE INTERNAL)**

***via email**

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NAME	MBarillas	CMaupin	SDembek	ALoveBlair	JCai
DATE	7/28/2020	6/29/2020	7/28/2020	5/20/2020	7/28/2020
OFFICE	NMSS/DUWP/ LLWP/BC*	NMSS/REFS/ RASB/BC*	NMSS/MSST/MSLPB/ BC*	NSIR/DPCP/MSB/ BC*	NMSS/REFS/D*
NAME	SKoenick	CBladey	LRoldan-Otero	ARivera	JTappert
DATE	6/29/2020	6/5/2020	6/2/2020	6/1/2020	7/29/2020
OFFICE	NMSS/DUWP/ D*	OCFO*	OGC*	NMSS Tech Editor*	NMSS/D*
NAME	THolahan (BPham for)	RAllwein	APessin (NLO)	LMoorin	JLubinski
DATE	7/29/2020	6/11/2020	8/26/2020	8/10/2020	8/24/2020
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NAME	MDoane				
DATE	10/21/20				

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