



NUCLEAR REGULATORY COMMISSION

10 CFR Part 61

[NRC-2017-0081]

RIN 3150-AK00

Greater-than-Class-C and Transuranic Waste

AGENCY: Nuclear Regulatory Commission.

ACTION: Draft regulatory basis; request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is requesting comments on a draft regulatory basis to support the development of a rulemaking for the disposal of certain types of greater-than-Class-C waste in a low-level radioactive waste land disposal facility. Greater-than-Class-C waste may include transuranic radionuclides (e.g., isotopes of plutonium) that contaminate nuclear fuel cycle waste. In addition, the NRC plans to hold a public meeting to promote understanding of the draft regulatory basis and to facilitate public comment.

DATES: Submit comments by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. Comments received after this date will be considered if it is practical to do so, but the NRC staff is able to ensure consideration only for comments received before this date.

ADDRESSES: You may submit comments by any of the following methods:

- **Federal Rulemaking Web Site:** Go to <https://www.regulations.gov> and search for Docket ID NRC-2017-0081. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions contact the individuals listed in the FOR FURTHER INFORMATION CONTACT section of this document.

- **E-mail comments to:** Rulemaking.Comments@nrc.gov. If you do not receive an automatic e-mail reply confirming receipt, then contact us at 301-415-1677.

- **Fax comments to:** Secretary, U.S. Nuclear Regulatory Commission at 301-415-1101.

- **Mail comments to:** Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.

- **Hand deliver comments to:** 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. (Eastern Time) Federal workdays; telephone: 301-415-1677.

For additional direction on obtaining information and submitting comments, see “Obtaining Information and Submitting Comments” in the SUPPLEMENTARY INFORMATION section of this document.

FOR FURTHER INFORMATION CONTACT: Cardelia Maupin, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-4127; e-mail: Cardelia.Maupin@nrc.gov; or Gary Comfort, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-8106; e-mail: Gary.Comfort@nrc.gov. Both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC-2017-0081 when contacting the NRC about the availability of information for this action. You may obtain publicly-available information related to this action by any of the following methods:

- **Federal Rulemaking Web Site:** Go to <https://www.regulations.gov> and search for Docket ID NRC-2017-0081.

- **NRC's Agencywide Documents Access and Management System**

(ADAMS): You may obtain publicly-available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "[Begin Web-based ADAMS Search](#)." For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. The ADAMS accession number for each document referenced (if it is available in ADAMS) is provided the first time that it is mentioned in this document.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1-F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments

Please include Docket ID NRC-2017-0081 in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at <https://www.regulations.gov> as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

Please note that the NRC will not provide formal written responses to each of

the comments received on the draft regulatory basis. However, the NRC will consider all comments received in the development of the final regulatory basis.

II. Discussion

Part 61 of title 10 of the *Code of Federal Regulations* (10 CFR), “Licensing Requirements for Land Disposal of Radioactive Waste” was originally promulgated in 1982. Section 61.2, “Definitions,” provides that waste as used in 10 CFR part 61 means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. The definition also states that low-level radioactive waste means radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs (2), (3), and (4) of the definition of byproduct material in 10 CFR 20.1003, “Definitions.”

In 10 CFR 61.55, “Waste classification,” the U.S. Nuclear Regulatory Commission (NRC) developed a classification system for those types of low-level radioactive waste that are suitable for near-surface disposal. Under the 10 CFR part 61 regulations, near-surface disposal is a subset of land disposal that involves disposal in the uppermost portion of the earth, approximately 30 meters below the surface. The NRC classification system categorizes waste as Class A, Class B, or Class C waste. This provision also describes low-level radioactive waste that is not generally acceptable for near-surface disposal, namely, waste for which form and disposal methods must be different and generally more stringent than those specified for Class C waste. This waste is referred to as greater-than-Class C (GTCC) waste.

GTCC waste is generated by nuclear power reactors, facilities supporting the nuclear fuel cycle, and other facilities and licensees outside of the nuclear fuel cycle. This class of wastes include: 1) plutonium-contaminated nuclear fuel cycle wastes;

2) activated metals; 3) sealed sources; and 4) radioisotope product manufacturing wastes (i.e., certain wastes occasionally generated as part of the manufacture of sealed sources, radiopharmaceutical products, and other materials used for industrial, educational, and medical applications).

GTCC waste may include transuranic waste, which is waste containing transuranic radionuclides (e.g., isotopes of plutonium). Transuranic waste is a byproduct of nuclear research and power production and is primarily produced from spent fuel recycling, or medical isotope production. The NRC's current 10 CFR part 61 definition of "waste" in 10 CFR 61.2 excludes transuranic waste; thus, transuranic waste is not considered to be a form of low-level radioactive waste. The NRC's 10 CFR 61.2 definition is based upon a 1980 law, the Low-Level Radioactive Waste Policy Act, which excluded transuranic waste from the definition of low-level radioactive waste.¹ The 1980 law, however, was superseded by the Low-Level Radioactive Waste Policy Amendments Act of 1985, which did not exclude transuranic waste from the definition of low-level radioactive waste.² Given this statutory change, the NRC has a basis to amend its 10 CFR 61.2 definition of waste to include transuranic waste.

The identification and evaluation of regulatory concerns associated with the land disposal of GTCC waste will largely depend on the characteristics of the wastes (e.g., isotopes, concentrations and volumes of waste, physical and chemical properties). The variable characteristics of the waste can influence the decision regarding the appropriate regulatory approach to use for management and disposal of these wastes. Overly conservative assumptions regarding the inventory and the physical characteristics of a potential site for a land disposal facility, such as the site's hydrogeologic and geomorphic conditions, could significantly limit disposal options, whereas overly optimistic

¹ Sec. 2(2), Pub. L. 96-573, 94 Stat. 3347.

² 42 U.S.C. 2021b *et seq.*

assumptions with respect to site characteristics could lead to a disposal facility that may not provide adequate protection of public health and safety.

The draft regulatory basis, "Regulatory Basis for the Disposal of Greater-than-Class C (GTCC) Waste," can be obtained at ADAMS Accession No. ML19059A403.

The draft regulatory basis evaluates which GTCC waste streams could be safely disposed in a near-surface disposal facility and what type of regulatory changes would need to be considered to permit such action. In addition, the draft regulatory basis evaluates whether disposal of GTCC waste presents a hazard such that the NRC should retain authority over its disposal and not allow any Agreement State licensing over such a disposal.³

In the draft regulatory basis, the NRC staff concluded that most GTCC waste streams would be acceptable for near-surface disposal under the existing 10 CFR part 61 regulatory framework with the addition of new requirements, including requirements to protect an inadvertent intruder⁴ by showing that such an individual would not likely exceed a radiation dose of 5 mSv/yr (500 mrem/yr) limit. In particular, the NRC staff has determined that an applicant for a near-surface disposal facility that can accept GTCC waste must: 1) prepare and submit, as part of its application, a site-specific intruder assessment demonstrating that the 10 CFR part 61, subpart C performance requirements for inadvertent intruder protection will be met; and 2) must dispose of GTCC waste at a minimum depth of 5 meters below the surface of the earth and install or construct a barrier to inadvertent intrusion that is effective for a minimum of 500 years. Other regulatory amendments recommended by the NRC staff include: 1) removing

³ Section 274b of the AEA (42 U.S.C. 2021) authorizes the Commission to enter into an agreement with the Governor of a State whereby the Commission relinquishes its regulatory authority, and the State assumes that authority, for the regulation of certain types of radioactive materials. A State that has entered into such an agreement with the NRC is defined as an "Agreement State."

⁴ An inadvertent intruder is a person who might occupy the disposal site after site closure and engage in normal activities, such as agriculture, dwelling construction, drilling for water and other reasonably foreseeable pursuits that might unknowingly expose the person to radiation from the waste included in or generated from a low-level radioactive waste facility.

language from certain provisions of 10 CFR 61.55 that preclude a generic near-surface disposal pathway for GTCC waste; 2) revising the definition of “waste” in 10 CFR 61.2, to remove the exclusion of TRU waste; and 3) amending the labeling requirements at 10 CFR 61.57, “Labeling,” to include a reference to GTCC waste.

In the draft regulatory basis, the NRC staff also concluded that most GTCC waste could be safely regulated by an Agreement State, although certain regulatory changes to the 10 CFR part 150 regulations, “Exemptions and Continued Regulatory Authority in Agreement States and Offshore Waters under Section 274,” are recommended if the regulatory goal is to accommodate Agreement State regulatory oversight. Section 150.14, “Commission regulatory authority for physical protection,” requires that persons in Agreement States who possess, use, or transport quantities of special nuclear material above certain mass thresholds must comply with the NRC’s regulation, 10 CFR 73.67, “Licensee fixed site and in-transit requirements for the physical protection of special nuclear material of moderate and low strategic consequence.” The NRC promulgated 10 CFR 73.67 as a “common defense and security” regulation and as such, it can only be enforced by the NRC. In order to avoid the necessity of an Agreement State licensee having to obtain and comply with an NRC license or be otherwise subject to NRC regulatory oversight in addition to complying with the applicable Agreement State requirements, a potential rulemaking could amend 10 CFR 150.14 to change the requirement to give Agreement State near-surface disposal facility licensees the option to comply with the applicable Agreement State’s compatible regulations for the NRC’s regulations set forth in 10 CFR part 37, “Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material,” in lieu of complying with 10 CFR 73.67.

Similarly, the NRC’s regulation at 10 CFR 150.15, “Persons not exempt,” requires that persons in Agreement States engaging in certain categories of activities

are subject to NRC licensing and regulatory requirements. A potential rulemaking could amend 10 CFR 150.15 to relieve Agreement State licensees receiving and storing two categories of GTCC waste covered by 10 CFR 150.15 from having to comply with NRC licensing and regulatory requirements in addition to those of the applicable Agreement State. The two categories are 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 reactor-related GTCC waste (10 CFR 150.15(a)(8)).

III. Specific Request for Comments

The NRC considers a draft regulatory basis to be a pre-rulemaking document. If the NRC decides to pursue rulemaking, the NRC will publish a proposed rule that will seek public comment. Presently, the NRC is seeking advice and recommendations from the public on the draft regulatory basis. We are particularly interested in comments and supporting rationale from the public on the following:

- 1) Are there any characteristics of GTCC waste not identified in the draft regulatory basis that should be considered when evaluating the near surface disposal of GTCC?
- 2) In addition to the potential regulatory changes identified in this notice, should the NRC consider other potential changes or additions to the existing technical requirements for low-level radioactive waste disposal in evaluating GTCC waste disposal?
- 3) Are there any additional issues that should be addressed to enhance public or occupational safety regarding the disposal of GTCC waste, either by rulemaking or through the development of guidance documents, that were not addressed in the draft regulatory basis?

4) Are there any issues that should be addressed to establish a relatively uniform set of requirements for GTCC waste disposal in Agreement States and in non-Agreement States that were not addressed in the draft regulatory basis?

5) Are there any other changes to the NRC's regulations that are not addressed in the draft regulatory basis that should be considered to facilitate the disposal of GTCC waste and better align the requirements with current health and safety standards?

6) Are there other alternatives that are more cost effective, while adhering to the requirements of 10 CFR part 61, that the NRC should consider for implementing requirements for GTCC waste disposal in the near surface that were not addressed in Section 7 of the draft regulatory basis?

7) Are there any additional advantages or disadvantages or applicable cost information that the NRC should have considered as part of its evaluation of alternatives in Section 7 of the draft regulatory basis that are pertinent to the NRC or any stakeholders including the public, industry, Agreement States, Indian Tribes, the U.S. Department of Energy, or other government agencies?

8) Are there any other issues, not identified in the above questions, that the NRC should have considered in the draft regulatory basis?

IV. Cumulative Effects of Regulation

The cumulative effects of regulation (CER) describe the challenges that licensees or other impacted entities (such as Agreement State regulatory agencies) may face while implementing new regulatory positions, programs, and requirements (e.g., rules, generic letters, backfits, inspections). The CER is an organizational challenge that results from a licensee or impacted entity implementing a number of complex positions, programs, or requirements within a limited implementation period and with available

resources (which may include limited available expertise to address a specific issue).

The NRC has implemented CER enhancements to the rulemaking process to facilitate public involvement throughout the rulemaking process. Therefore, the NRC is specifically requesting comment on the cumulative effects that may result from a proposed rule related to the actions discussed in the draft regulatory basis. In developing comments on the draft regulatory basis, and assuming the NRC were to pursue rulemaking, consider the following questions:

1) In light of any current or projected CER challenges, what should be a reasonable effective date, compliance date, or submittal date(s) from the time the final rule is published to the actual implementation of any new proposed requirements, including changes to programs, procedures, or the facility?

2) If current or projected CER challenges exist, what should be done to address this situation (e.g., if more time is required to implement the new requirements, what period of time would be sufficient, and why such a time frame is necessary)?

3) Do other regulatory actions (e.g., orders, generic communications, license amendment requests, and inspection findings of a generic nature) by the NRC or other agencies influence the implementation of the potential proposed requirements?

4) Are there unintended consequences? Would a rule based upon the recommendations described in the draft regulatory basis create conditions that would be contrary to the purpose and objectives of 10 CFR part 61? If so, what are the consequences and how should they be addressed?

5) Please consider providing information on the estimates of the costs and benefits of the NRC promulgating a rule based upon the recommendations described in the draft regulatory basis, which can be used to support any additional regulatory analysis by the NRC.

V. Public Meeting

The NRC plans to conduct a public meeting to describe the draft regulatory basis and to give the public an opportunity to ask questions about the draft regulatory basis.

The NRC will publish a notice of the location, time, and agenda for the meeting on the NRC's public meeting Web site at least 10 calendar days before the meeting. Stakeholders should monitor the NRC's public meeting Web site for information about the public meeting at: <http://www.nrc.gov/public-involve/public-meetings/index.cfm>. The meeting notice will also be added to the Federal rulemaking Web site at <http://www.regulations.gov> under Docket ID NRC-2017-0081. See the "Availability of Documents" section of this document for instructions on how to subscribe to receive e-mail notifications when documents are added to the docket folder on the Federal rulemaking Web site.

VI. Availability of Documents

The documents identified in this *Federal Register* notice are available to interested persons through one or more of the methods listed in the ADDRESSES section of this document.

The NRC may post documents related to this rulemaking activity to the Federal rulemaking Web site at <https://www.regulations.gov> under Docket ID NRC-2017-0081. These documents will inform the public of the current status of this activity and/or provide additional material for use at future public meetings.

The Federal rulemaking Web site allows you to receive alerts when changes or additions occur in a docket folder. To subscribe: 1) Navigate to the docket folder (NRC-2017-0081); 2) click the "Sign up for E-mail Alerts" link; and 3) enter your e-mail address and select how frequently you would like to receive e-mails (daily, weekly, or monthly).

VII. Plain Writing

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum, "Plain Language in Government Writing," published June 10, 1998 (63 FR 31883). The NRC requests comment on this document with respect to the clarity and effectiveness of the language used.

Dated at Rockville, Maryland, this 16th day of July 2019.

For the Nuclear Regulatory Commission.

Patricia K. Holahan,
Director, Division of Rulemaking,
Office of Nuclear Material Safety and Safeguards.

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