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[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 74

[Docket No. PRM-74-1; NRC-2026-4456]

Irradiated Fuel Reprocessing Plants

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; notice of docketing, and request for comment.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) has received a petition for rulemaking (PRM) from Howard L. Hall, PhD, dated August 14, 2026, requesting that the NRC remove the exclusion of irradiated fuel reprocessing plants and establish material control and accounting requirements appropriate to that facility class. The petition was docketed by the NRC on September 14, 2026, and has been assigned Docket No. PRM-74-1. The NRC is examining the issues raised in PRM-74-1 to determine whether they should be considered in rulemaking. The NRC is requesting public comment on this petition at this time.

DATES: Submit comments by **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Submit your comments, identified by Docket ID NRC-2026-4456, at https://www.regulations.gov. If your material cannot be submitted using https://www.regulations.gov, call or email the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document for alternate instructions.

Do not include any personally identifiable information (such as name, address, or other contact information) or confidential business information that you do not want publicly disclosed. All comments are public records; they are publicly displayed exactly as received, and will not be deleted, modified, or redacted. Comments may be submitted anonymously.

Follow the search instructions on https://www.regulations.gov to view public comments.

You can read a plain language description of this petition for rulemaking at https://www.regulations.gov/docket/NRC-2026-4456. 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: Irene Wu, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington DC 20555-0001; telephone: 301-415-1951, email: irene.wu@nrc.gov.

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC-2026-4456 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 Website:** Go to https://www.regulations.gov and search for Docket ID NRC-2026-4456.
- **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 email 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:** The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1-800-397-4209 or 301-415-4737, between 8 a.m. and 4 p.m. eastern time, Monday through Friday, except Federal

holidays.

B. Submitting Comments

The NRC encourages electronic comment submission through the **Federal Rulemaking Website** (https://www.regulations.gov). Please include Docket ID NRC-2026-4456 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.

II. The Petitioner and Petition

The PRM was submitted by Howard L. Hall, PhD, a nuclear and radiochemist. The petitioner submits this petition in his individual capacity as a member of the technical public, not on behalf of any institution. The PRM requests that the NRC amend 10 CFR part 74, “Material Control and Accounting of Special Nuclear Material,” of title 10 of the *Code of Federal Regulations* (10 CFR), to remove the exclusion of irradiated fuel reprocessing plants from the material control and accounting (MC&A) requirements in § 74.51(a). The petition proposes applying subpart E of 10 CFR part 74, “Formula Quantities of Strategic Special Nuclear Material,” requirements to irradiated fuel reprocessing facilities, adding bulk-processing provisions, and restoring proportionate

relief for research and pilot-scale operations. The petition may be found in ADAMS at Accession No. ML26257A310.

III. Discussion of the Petition

The petitioner requests that the NRC amend its regulations in § 74.51(a) to remove the exclusion of irradiated fuel reprocessing plants and establish MC&A requirements for the bulk handling of formula quantities of plutonium in a continuous chemical process, either in the existing subpart E of 10 CFR part 74 or in a new subpart. The petitioner argues that the current regulatory framework for reprocessing facilities is inadequate and incomplete. Current regulations in 10 CFR part 74 place reprocessing facilities under requirements designated for special nuclear material (SNM) of moderate strategic significance (subpart D of 10 CFR part 74, “Special nuclear material of moderate strategic significance), even though large-scale reprocessing facilities would handle formula quantities of strategic SNM. The petitioner emphasizes the exclusion in § 74.51(a) was added to the regulations nearly 40 years ago when the NRC believed that commercial reprocessing was unlikely in the near future and that more advanced technology would be needed before new regulations could be written. The petitioner asserts that reprocessing has now become viable due to recent Federal actions, including Executive Order 14299, “Deploying Advanced Nuclear Reactor Technologies for National Security” (May 29, 2025; 90 FR 22581), recent U.S. Department of Energy solicitations, and emerging commercial proposals for privately funded reprocessing facilities.

The petitioner proposes several regulatory updates to 10 CFR part 74. The proposals fall into four main categories:

1. Primary amendment to § 74.51(a): The petitioner proposes removing “an irradiated fuel reprocessing plant” from the exclusion list in § 74.51(a). This change would place reprocessing facilities under subpart E of 10 CFR part 74 MC&A requirements for licensees possessing formula quantities of strategic

SNM. The petitioner also proposes a conforming amendment to § 74.41(a) in subpart D of 10 CFR part 74 to create an upper bound of less than five formula kilograms, to ensure reprocessing facilities are not subject to both subparts simultaneously.

2. Additions to subpart E of 10 CFR part 74 specifically addressing bulk chemical processing: The petitioner proposes adding a new section to subpart E establishing requirements specific to the continuous chemical processes used in reprocessing plants. The proposed requirements include near-real time accountancy for each material balance area for material balance periods of days to weeks; quantitative targets for inventory difference uncertainty; process monitoring aligned to the flowsheets of the continuous reprocessing operations employed; safeguards-by-design at the construction stage; and compatibility with international safeguards.
3. Clarification of requirements for research and development (R&D) and pilot-scale operations: The petitioner proposes the NRC confirm the applicability of existing subpart E of 10 CFR part 74 provisions for R&D reprocessing operations and clarify requirements for pilot-scale reprocessing operations.
4. Alternative approach if subpart E is not amended: If the NRC prefers to preserve the structure of subpart E, the petitioner proposes creating a new subpart in 10 CFR part 74 specifically for reprocessing plants which provides requirements equivalent to subpart E and incorporating the proposed elements for bulk chemical processing and small-scale operations.

The petitioner concludes that rulemaking is the appropriate method to resolve the problem because it is a generic issue affecting all prospective reprocessing licensees, and rulemaking provides clarity and consistency in requirements for this facility class. The petitioner argues that establishing an updated, predictable, MC&A framework for reprocessing facilities will reduce long-term burden on applicants, enhance safeguards

effectiveness, and align the regulatory landscape with current national nuclear fuel cycle initiatives.

IV. Request for Comment

The NRC is seeking general comments from the public on the PRM. Additionally, the NRC asks the following specific questions:

1. Should the exclusion for irradiated fuel reprocessing facilities be removed from § 74.51(a)? Please explain the basis for your response.
2. Given the requirements in subpart D of 10 CFR part 74, can a large-scale reprocessing facility credibly meet the subpart D general performance objectives for timely detection of a significant quantity and the required system capabilities for inventory difference and standard error of inventory difference without implementing some form of process monitoring? Please explain the basis for your response and provide examples as appropriate.
3. Is there a need to clarify the MC&A requirements for R&D and pilot-scale reprocessing operations? Please explain your response.
4. Are there additional changes to the MC&A regulations for reprocessing facilities that the NRC should consider? Please explain the basis for your response and provide specific recommendations to the extent possible.

V. Conclusion

The NRC has determined that the petition meets the sufficiency requirements for docketing a PRM under § 2.803, “Petition for rulemaking-NRC action.” The NRC will examine the issues raised in PRM-74-1 and any comments received in response to this comment request to determine whether these issues should be considered in rulemaking. The public can monitor further action on the rulemaking that will address this petition by searching Docket ID NRC-2026-4456 on the Federal rulemaking website, https://www.regulations.gov. The site allows members of the public to receive alerts when changes or additions occur in a docket folder. To subscribe: 1) navigate to the docket folder (NRC-2026-4456); 2) click the “Subscribe” link; and 3) enter an email

address and click on the “Subscribe” link. The NRC also tracks the status of all NRC rules and PRMs on its website at https://www.nrc.gov/about-nrc/regulatory/rulemaking/rules-petitions.html.

Dated October 21, 2026.

For the Nuclear Regulatory Commission.

Jody Martin,
Secretary of the Commission.
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