

NUCLEAR REGULATORY COMMISSION

10 CFR Part 20

[NRC-2011-0162]

RIN 3150-AJ17

Prompt Remediation of Residual Radioactivity During Operation

AGENCY: Nuclear Regulatory Commission.

ACTION: Discontinuation of rulemaking activity.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is discontinuing a rulemaking activity that would have required licensees to remediate residual radioactivity resulting from licensed activities during facility operations, rather than at license termination. The purpose of this action is to inform members of the public that this rulemaking activity is being discontinued and to provide a brief discussion of the NRC's decision to discontinue it. This rulemaking activity will no longer be reported in the NRC's portion of the Unified Agenda of Regulatory and Deregulatory Actions (the Unified Agenda).

DATES: Effective **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2011-0162 when contacting the NRC about the availability of information regarding this action. You may obtain publicly available information related to this document using any of the following methods:

- **Federal Rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID **NRC-2011-0162**. Address questions about NRC dockets to Carol Gallagher; telephone: 301-415-3463; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly available documents online in the ADAMS Public Documents collection at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then 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 in this document (if that document is available in ADAMS) is provided the first time it is mentioned in the SUPPLEMENTARY INFORMATION section.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Robert D. MacDougall, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-5175; e-mail: Robert.MacDougall@nrc.gov.

SUPPLEMENTARY INFORMATION:

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I. Background

This action is the culmination of a process of evaluating operating experience and interacting with the public since 2007 to determine whether the NRC should require licensees to remediate, during facility operations, releases of residual radioactivity into the surface and subsurface of their facility sites. Such remediation during operations has come to be known as “prompt” remediation. In order to permit a site to be released for unrestricted use, licensees are currently required to remediate, before license termination, all residual radioactivity at their facility sites to levels that provide reasonable assurance that no member of the public will receive a dose from the decommissioned facility greater than 25 millirem (mrem) per year.

As a result of its evaluations and stakeholder interactions, the NRC staff recommended, and the Commission decided, to discontinue further work on a prompt remediation rulemaking. A discussion of this decision is provided in Section II of this document.

II. Discussion

The Commission first directed the staff to study the potential need for a prompt remediation rulemaking when the Commission approved the proposed decommissioning planning rule (DPR) in 2007. In its staff requirements memorandum (SRM) on that proposed rule (ADAMS Accession No. ML073440549), the Commission directed the staff to “make further improvements to the decommissioning planning process by addressing the remediation of residual radioactivity during the operational phase with the objective of avoiding complex decommissioning challenges that can lead to legacy sites.” In its subsequent *Federal Register* notice (FRN) for the proposed DPR, published January 22, 2008, the Commission defined

“legacy site” as “a facility that is in decommissioning with complex issues and an owner who cannot complete the decommissioning work for technical or financial reasons” (73 FR 3813).

Such a site could not be released for unrestricted use when the license is terminated, and would therefore require an institution, usually a government agency, to maintain and restrict access to the site to keep doses to members of the public below the individual site-specific limit approved by the NRC.

Under section 20.1402 of title 10 of the *Code of Federal Regulations* (10 CFR), the maximum dose limit for release of a site for unrestricted use by the public is 25 mrem per year. However, if the site is a legacy site requiring institutional controls on access, the Commission, assuming the eventual loss of such controls, may approve a higher limit up to 500 mrem per year under 10 CFR 20.1403. It may also approve alternative release criteria under 10 CFR 20.1404. In either case, the licensee would have to demonstrate, among other things, that doses would be as low as reasonably achievable (ALARA) and the concerns of affected individuals and institutions in the community had been appropriately addressed. To minimize the future possibility of these alternatives to the unrestricted release of decommissioned sites, the objective of the proposed DPR was to “improve decommissioning planning and thereby reduce the likelihood that any current operating facility will become a legacy site” (73 FR 3812; January 22, 2008).

The final DPR, published on June 17, 2011 (76 FR 35512), retained that objective, and took effect on December 17, 2012. The DPR requires licensees to conduct their operations to minimize the introduction of residual radioactivity into the site, which includes the site’s subsurface soil and groundwater. Licensees may also be required to perform site surveys to determine whether residual radioactivity is present in subsurface areas, and to keep records of these surveys with records important for decommissioning. Among other things, the rule

requires licensees to report additional details in their decommissioning cost estimates (76 FR 35512; June 17, 2011).

The DPR does not, however, mandate that licensees remediate during operations. In response to a comment on the lack of such a requirement, the Commission noted in its FRN for the final rule that it “allows a licensee who detects subsurface contamination either to conduct immediate remediation or to plan for and provide funds in the form of financial assurance to conduct remediation at a later time, including at the time of decommissioning. Thus, this final rule creates a potential incentive for immediate remediation instead of an increased financial assurance obligation” (76 FR 35532; June 17, 2011).

In parallel with the development of the final DPR, and in accordance with the Commission’s 2007 directive to consider a prompt remediation requirement, the NRC staff developed a draft regulatory basis for a proposed rule to address prompt remediation (ADAMS Accession No. ML111580353). An FRN published on July 18, 2011 (76 FR 42074), announced the NRC’s “Consideration of Rulemaking to Address Prompt Remediation of Residual Radioactivity During Operations.”

The NRC staff held a public meeting and webinar on July 25, 2011, to discuss prompt remediation, and obtained and evaluated additional stakeholder comments for a revised draft regulatory basis for potential rulemaking (ADAMS Accession No. ML120190685). Subsequently, in SRM-SECY-12-0046, “Options for Revising the Regulatory Approach to Groundwater Protection” (ADAMS Accession No. ML121450704), the Commission directed the staff on May 24, 2012, to seek additional stakeholder comments on the draft regulatory basis for a proposed prompt remediation rule. The Commission also directed the staff to evaluate the pros and cons of moving forward with a proposed prompt remediation rulemaking.

The NRC staff held a public meeting and webinar on June 4, 2013, to obtain stakeholder comments on the ongoing prompt remediation issue. The staff then evaluated those comments and included the results in SECY-13-0108, “Staff Recommendations for Addressing Remediation of Residual Radioactivity During Operations” (ADAMS Accession No. ML13217A230). In SRM-SECY-13-0108 (ADAMS Accession No. ML13354B759), the Commission on December 20, 2013, approved the NRC staff’s recommendation to collect 2 years of additional data on the implementation of the DPR. The Commission also directed that the staff, after collecting and evaluating the data and holding a public meeting with stakeholders, provide the Commission a paper “with the staff’s recommendation for addressing remediation of residual radioactivity at licensed facilities during the operational phase of the facility.”

To evaluate the need for and potential benefits of additional rulemaking on prompt remediation, the NRC staff analyzed whether the manner of licensee compliance with the DPR has been adequate to prevent future legacy sites (see SECY-16-0121, “Staff Recommendations For Rulemaking To Address Remediation Of Residual Radioactivity During Operation,” October 16, 2016 (ADAMS Accession No. ML16235A298)). The staff evaluated: (1) NRC inspection results; (2) licensee event reports and radiological effluent monitoring reports; (3) the financial assurance mechanisms available to support decommissioning at different types of facilities; (4) the results of the Nuclear Energy Institute (NEI) 07-07, “Industry Groundwater Protection Initiative” (ADAMS Accession No. ML072610036) and associated groundwater contamination evaluations; (5) guidance promulgated by the NRC and industry groups such as NEI and the Electric Power Research Institute (EPRI); and (6) stakeholder feedback from a July 11, 2016, public webinar and other forums.

Based on these information sources, the NRC staff concluded in SECY-16-0121 that:

- Existing dose limits codified in the NRC's regulations provide adequate protection of public health and safety during operation, and an additional rule requiring prompt remediation would provide limited additional benefit.
- The current DPR requires early identification of residual radioactivity that, if allowed to spread, could prevent a site from being released for unrestricted use at license termination. The DPR also requires timely adjustments to decommissioning financial instruments to ensure that adequate funding will be available after facility shutdown to remediate any such residual radioactivity to comply with the criteria for license termination in 10 CFR part 20, appendix E. These requirements mitigate the potential that residual contamination unaccounted for in a licensee's funding for decommissioning would lead to a future legacy site.
- In some circumstances, mandated remediation during operation could adversely affect operational safety, as certain locations may be safely accessible only after operations have ceased or when operating conditions permit. This would be the case, for example, if residual radioactivity were suspected underneath a building within which a licensee was using or storing radioactive materials.
- Groundwater resources are protected from abnormal releases by effective groundwater monitoring programs, as well as industry initiatives where appropriate, to identify significant residual radioactivity early in the operating life of the facility. Examples of such initiatives are the NEI 07-07 effort and supporting EPRI guidance for evaluating potential groundwater contamination.
- Licensees are effectively complying with the DPR. The current regulations are sufficient to ensure that when a facility ceases operation, site characterization will have resulted in the appropriate identification of all significant residual subsurface radioactivity, and

adequate financial resources will be available to complete decommissioning for release of the site for unrestricted use at the time of license termination. Two bases for this confidence are that no new legacy sites have been identified since the NRC's financial assurance regulations were promulgated in 1988, and no sites have had to make adjustments to their decommissioning funds due to the identification of significant residual radioactivity since implementation of the DPR.

The staff also found in SECY-16-0121 that residual radioactivity detected to date has been limited mostly to onsite areas, and there has not been a significant impact on public health and safety. Under current regulations, this is unlikely to change. In addition to complying with applicable dose standards, for example, licensees also must comply with the requirement in 10 CFR 20.1101(b) to "use, to the extent practical, procedures and engineering controls ... to achieve ... doses to members of the public as low as reasonably achievable (ALARA)." By requiring public doses to be ALARA, existing NRC regulations provide ample assurance that the need for a prompt remediation rule is unlikely to grow with time.

Based on these considerations, earlier assessments, and its conclusions from the 2 additional years of operating experience, the NRC staff in SECY-16-0121 recommended that further work on a prompt remediation rule be discontinued. On December 21, 2016, in SRM-SECY-16-0121 (ADAMS Accession No. ML16356A583), the Commission accepted the staff's recommendation.

From the staff's evaluation of how licensees are complying with the DPR and other NRC regulations limiting doses to members of the public, the Commission has determined that licensees are operating their facilities to minimize leaks and spills, monitor for residual radioactivity, adjust decommissioning funding to account for residual surface and subsurface radioactivity, and maintain doses to the public within regulatory limits, including ALARA

requirements. Compliance with these regulations protects public health and safety and significantly reduces the potential for additional legacy sites.

III. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

Document	ADAMS Accession No. / <i>Federal Register</i> Citation
Decommissioning Planning; Proposed Rule (January 22, 2008)	73 FR 3812
Decommissioning Planning; Final Rule (June 17, 2011)	76 FR 35512
SRM - SECY-07-0177 - Proposed Rule: Decommissioning Planning	ML073440549
Draft Proposed Technical Basis For Prompt Remediation, Rev. 4	ML111580353
<i>Federal Register</i> notice "Consideration of Rulemaking to Address Prompt Remediation of Residual Radioactivity During Operations." (July 18, 2011)	76 FR 42074
Draft Technical Basis For Prompt Remediation, Rev. 3	ML120190685
SRM-SECY-12-0046, "Options for Revising the Regulatory Approach to Groundwater Protection"	ML121450704
SECY-13-0108, "Staff Recommendations for Addressing Remediation of Residual Radioactivity During Operations"	ML13217A230
SRM-SECY-13-0108 "Staff Recommendations For Addressing Remediation Of Residual Radioactivity During Operations"	ML13354B759
Nuclear Energy Institute, NEI 07-07, "Industry Groundwater Protection Initiative"	ML072610036
SECY-16-0121, "Staff Recommendations For Rulemaking To Address Remediation Of Residual Radioactivity During Operation"	ML16235A298
SRM-SECY-16-0121, "Staff Recommendations For Rulemaking To Address Remediation Of Residual Radioactivity During Operation"	ML16356A583

IV. Conclusion

The NRC is no longer pursuing revisions to its regulations in 10 CFR part 20 for the reasons discussed in this document. In the next edition of the Unified Agenda, the NRC will update the entry for this rulemaking activity and reference this document to indicate that it is no longer being pursued. This rulemaking activity will appear in the “Completed Actions” section of that edition of the Unified Agenda, but will not appear in future editions. If the NRC decides to pursue similar or related rulemaking activities in the future, it will inform the public through a new rulemaking entry in the Unified Agenda.

Dated at Rockville, Maryland, this 2nd day of October, 2017.

For the Nuclear Regulatory Commission.

/RA/

Annette L. Vietti-Cook,
Secretary of the Commission.