



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 28, 2021

MEMORANDUM TO: Kevin Hsueh, Chief
Radiation Protection and Consequence Branch
Division of Risk Assessment
Office of Nuclear Reactor Regulation

FROM: Micheal Smith, Health Physicist */RA/*
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SUBJECT: SUMMARY OF NUCLEAR REGULATORY COMMISSION
PUBLIC MEETING ON MARCH 5, 2021 TO DISCUSS THE
REVISION OF REGULATORY GUIDE 1.183

On March 5, 2021, the U. S. Nuclear Regulatory Commission (NRC) staff conducted a category 2 public meeting (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21048A354) to communicate the process, schedule, and items under staff consideration for the revision of Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors."

Purpose

Communicate the process, schedule, and proposed revisions by NRC staff for RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors." In addition, NRC staff answered questions, and accepted feedback on potential improvements that the staff should consider during the revision of RG 1.183.

Meeting Summary

The NRC staff's presentation (ADAMS Accession No. ML21056A058) provided the staff's key messages for the revision of RG 1.183. The key messages included the overall objectives of the RG 1.183 revision such as the staff's plans to: incorporate lessons learned from recent license amendment request (LARs); incorporate relevant operating experience; respond to changes in regulatory environment (e.g., SRM-SECY-18-0049 & SRM-SECY-19-0036); ensure the update to the RG is more useful by considering feedback and comments from all stakeholders; ensure sufficient guidance is in place for advanced light water reactors, accident tolerant fuel (ATF), high-burnup, and increased enrichment fuel; and incorporate insights from new research activities.

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After communicating the key messages, the staff discussed the history of the regulatory framework and guidance pertaining to accident source terms for light-water nuclear power plants.

Furthermore, the NRC staff discussed the history of the staff's efforts to revise RG 1.183. Specifically, the staff communicated that in October 2009, the Draft Regulatory Guide (DG) – 1199 (ADAMS Accession No. ML12023A248) was issued for public comment as a proposed revision 1 of RG 1.183. The NRC staff informed external stakeholders that since the RG 1.183 revision project will involve another opportunity for stakeholders to review and comment on an updated DG, that the staff will not be providing formal responses to the public comments on DG-1199. However, comments received on DG-1199 are being considered by staff during the development of the new DG for revision 1 of RG 1.183. In addition, the staff noted that lessons learned from the evaluation of recent LARs are being considered by staff to further inform the revision of RG 1.183.

The staff also communicated the intent to make the DG for revision 1 of RG 1.183 available for public comment in the fourth quarter of calendar year of 2021. After the public comment period, the staff will address any public comments and update the RG based on those comments as appropriate. The staff will then provide the final RG package for review by the Office of General Counsel (OGC) and Advisory Committee on Reactor Safeguards (ACRS). If OGC or ACRS have any issues, questions, or items for the staff, they will be addressed by the staff prior to finalizing and issuing the RG. Staff informed stakeholders that the NRC plans to finalize revision 1 of RG 1.183 in the second quarter of calendar year 2022.

Following the staff's communication of the planned schedule for the RG update, the staff discussed some of the specific proposed updates to the RG. The topics for proposed revision that were discussed included: 1) aerosol deposition models; 2) accident tolerant fuel, high burn up and extended enrichment; 3) non-loss-of-coolant accident (Non-LOCA) release fractions; 4) revised fuel handing accident; 5) risk and engineering insights; and 6) lessons learned from licensing reviews. Throughout the discussion of the topics, the staff responded to several questions from industry representatives and accepted feedback to consider for potential improvements on the RG.

The NRC staff's responses to the questions included the following:

- During the discussion of aerosol deposition models, industry representatives asked the staff if they could obtain more information related to the "multi-group" approach that the NRC is considering. Staff informed meeting attendees that more specifics on the "multi-group" methods would be forthcoming with the issuance of the draft RG 1.183 Revision 1.
- Following extensive discussions on high burn up and extended enrichment, an individual asked whether the guidance would be limited to rod average burnups of 68 GWd/MTU. The staff's response to the question was yes. For the Non-LOCA radionuclide release fractions, the applicability is limited to fuel rod power histories below the power curves included in the slides for this public meeting. The staff is actively investigating an

expanded applicability beyond 68 GWd/MTU. However, it is likely that the draft RG will remain applicable to fuel rod burnup up to 68 GWd/MTU.

- When discussing the staff's revised fuel handling accident, there was a question on whether licensees would be able to use different parts of the guidance from revision 0 and revision 1 of RG 1.183. The staff informed the meeting attendees that the acceptability of using different aspects of the guidance from the two revisions is determined on a case-by-case basis after the staff's review of the justification provided by the licensees.
- During the use of risk and engineering insights discussion, there was a question regarding the availability of the technical assessment. Staff noted that the technical assessment supporting the RG update is expected to be made publicly available as part of the draft RG package currently scheduled to be issued for public comment in the fourth quarter of calendar year of 2021.
- During the presentation of the lessons learned from licensing reviews, staff were asked whether they could clarify what the NRC means by "permit access and occupancy of the control room" in General Design Criteria 19. The staff informed the meeting attendees that the NRC would continue to consider how to clarify this during the RG revision.

Public Feedback

One member of the public provided feedback that they believe the current practice associated with containment aerosol concentrations for assessing main steam isolation valve leakage is non-conservative and conceptually in error. The member of the public also noted that a petition for rulemaking regarding this subject had been submitted. The staff noted that since this subject is currently being considered in another NRC formal process, it would not be discussed during this public meeting. However, the public should expect to see the outcomes of the petition for rulemaking once a decision is made on the petition.

Meeting Attendance

A total of 97 people attended the meeting via teleconference; however, only speakers for this meeting are listed below.

Mark Blumberg	NRC	Micheal Smith	NRC
Paul Clifford	NRC	Shane Gardner	Exelon
Elijah Dickson	NRC	Frankie Pimentel	NEI
Mike Franovich	NRC	Fred Smith	EPRI
Michelle Hart	NRC	Alex Marcavich	Dominion Energy
John Parillo	NRC	Bill Evans	Southern Nuclear
Steve Jones	NRC	Gregory Broadbent	Entergy

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