

Information Sharing Public Meeting

Draft Guide (DG) 1425

Update to Regulatory Guide 1.183, Revision 1, “Alternative Radiological Source
Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors”

June 12, 2024

ADAMS Accession No. ML24162A245



Introductions

Please ensure to identify yourself before speaking throughout the meeting.

NRC Opening Remarks

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Agenda

- Background
- Methods of Stakeholder Involvement
- Schedule
- Overview of Early Public Engagement Efforts
- Priorities
- Selected Topics for Discussion
- Review of Public Draft Language File

Background – What/Why

- Revision 0 – Implementing guidance for 10 CFR 50.67, “Accident Source Term”
 - Identified the significant attributes of an acceptable accident AST based largely on NUREG-1465, “Accident Sources Terms for Light-Water Nuclear Power Plants” (1995)
 - provides assumptions and methods that are acceptable to the NRC staff for performing design basis radiological analyses using an AST
- Revision 1 – Incorporated improved understanding of source term behavior and expanded applicability to higher burnups
- Revision 2 –
 - Safely enable applicability to higher burnups and increased enrichments
 - Address implementation issues
 - Refine conservatisms and allow flexibility in analysis approaches
 - Maintain adequate protection and reflect NRC commitments to Principles of Good Regulations
- See supplementary slides for additional information on RG process.

Background (Cont'd)

- Increased Enrichment Rulemaking
 - Docket ID NRC-2020-0034, www.regulations.gov
 - Regulatory Basis comment period ended on January 22, 2024
 - Alternative 2 for Control Room Dose Criteria proposed changes to criteria
 - Staff has been developing draft guidance in case this alternative is selected
 - Per NRC policy to reduce the cumulative effects of regulation, implementing guidance should be developed with proposed rules
 - Important Point – Development of rule language is related to but separate from guidance development

Stakeholder engagement for the rulemaking is through Regulations.gov.

Stakeholder Involvement

- Staff aiming to be responsive to feedback
- Public Workshops and Information Meetings
 - 3 Workshops (1/9/24, 2/13/24 and 3/8/24)
 - 2 Information Sharing Meetings (5/1/24 and 6/12/24)
- Contact Project Leads
- Meeting Feedback
- ACRS Briefings – approximately Spring 2025
- Draft Guide Comment Period
 - Aligned with Proposed Increased Enrichment Rulemaking
 - Docket ID NRC-2020-0034, www.regulations.gov
 - Comment period on Proposed Increased Enrichment Rulemaking Regulatory Basis ended on January 22, 2024

Project Schedule

Milestone	Tentative Completion
Public Workshops* and Information Meetings**	January 2024 – June 2024
DG Internal Review begins	June 2024
DG Internal Review completed	October 2024
Pre-Decisional DG Publicly Available to Support ACRS Briefings	Spring 2025
ACRS Briefings (Staff to respond as needed)	Spring 2025
Increased Enrichment Proposed Rule package to Commission (will include DG referenced in SECY paper)	June 2025 ***

* The term “Workshop” means a Comment-Gathering Meeting as described in the NRC’s policy statement on public meetings (see 86 FR 14964)

** The term “Information Meeting” means NRC will inform attendees and allow questions (see 86 FR 14964)

*** Aligned with IE RM schedule

Overview of Early Public Engagement Efforts

- 5 Total Public Meetings
 - 3 Workshops, 2 Information Sharing
 - About 15 hours of public meeting time (not inclusive of preparation time)
 - Responsive to request for opportunities for early stakeholder engagement
- Benefits
 - Generate shared understanding
 - Incorporate stakeholder perspective in final positions recommended by staff
 - Enables sharing stakeholder perspective in staff communications with the Commission
- Additional Considerations
 - Early engagement efforts are complementary of the agency processes for public engagement



Priority Mapping

Priority	Issue Description
1	Provide method to credit decontamination in the suppression pool
2	Support an increase in CR dose design criteria
3	Development of updated decontamination coefficients using the new phase durations for both BWR and PWR containments to be used by the downstream dose codes
4	Revise Non-LOCA Release Fractions in RG 1.183R1 Tables 3 and 4
5	Develop disposition for non-LOCA FFRD
6	Provide clarification via a RIS or other regulatory vehicle on EQ applicability for continued use of TID-14844 source term
7	Address excess conservatisms in the guidance where combined airborne and water releases are greater than the core inventory
8	Include flexibility in the guidance to apply statistical approaches to dose calculations

NRC Priorities

- Adequate protection/POGR
- Changes to enable Increased Enrichment Rulemaking
- Develop implementing guidance for BWR pathway specific source terms
- Address potential guidance implementation issues
 - Select DPO Items
 - Version consolidation/backfit?
 - Non-LOCA Release Fractions
 - Non-LOCA FFRD
 - EQ
- Process improvements
 - Refine Conservatisms
 - Flexibility

Insight into Guidance Development Process

- Process

- Staff makes technically sound recommendations to management
 - Management approves recommendations to Commission
 - Commission can approve/deny/set different course
- Diversity in thought and positions among staff
 - Free and open exchange of views and ideas
 - NRC Policy on Differing Views (ML17065A327) provides multiple options for Staff



Priorities Addressed

- Enable implementation of near-term, advance reactor fuels including increased enrichments and high burnup fuels
 - Up to 8 weight-percent (wt%) Uranium-235 (U-235) for PWRs and (10 wt% U-235 for BWRs)
 - Up to a maximum rod average 80 gigawatt days per metric ton uranium (GWd/MTU)
 - Implementing graded, risk-informed, performance-based approach to determining applicable control room design criterion
- Enable crediting BWR suppression pool for radionuclide transport calculations through implementation of a pathway-specific source term approach
- Implementation Issues
 - Select DPO items
 - Version consolidation/backfit - Revs 0, 1 and 2 will coexist with applicability statements as described in each version. No information has been discovered that would challenge the staff's conclusions of the adequacy of each revision when limited to the applicability statements in each revision
 - Updated non-LOCA release fractions, guidance for developing fuel-design/plant-specific release fractions and guidance for non-LOCA FFRD
- Process Improvements:
 - Guidance for conducting margins analyses and increasing risk-informed considerations in submittals
 - Guidance for best-estimate plus uncertainty approaches to calculations

Selected Topics for Discussion

Topics

- Control Room Design Criteria
- Pathway-Specific Source Term Guidance
- Non-LOCA Gap Release Fractions and Changes to Appendix I
- Best Estimate Plus Uncertainty Guidance
- Additional Changes
 - Additional background information (e.g., EP, licensing basis information needed for applications, regulatory source terms)
 - Clarification of MHA as DBA
 - KM Appendix

* Docket ID NRC-2020-0034, www.regulations.gov

Public Draft Guide Excerpts File

- ML24162A323
- Disclaimer:

Note: This document contains draft/predecisional guidance language to support discussions during the NRC's public meeting on June 12, 2024 (ML24155A115). The NRC staff are not officially accepting comments during the meeting and will not provide any formal responses to any feedback provided during this meeting

The contents of this document are being considered for inclusion in staff guidance in DG-1425. The main purpose of this document is to engage stakeholders and receive feedback. This document has not been subject to NRC management and legal reviews or approvals, and its contents are subject to change and should not be interpreted as official agency positions.

- Draft language being considered by staff, does not have the benefit of full internal review
- Purpose –
 - Continued opportunity for early public engagement in the regulatory process
 - Support discussions during this meeting
 - Enable decision-making
 - Support comprehensive communications with the Commission
- Staff does not intend to formally respond to comments or accept additional comments pertaining to this document, after this meeting
 - Public comment period for the DG will be aligned with the Increased Enrichment Rulemaking (Docket ID NRC-2020-0034, www.regulations.gov)

Feedback and Discussion

Comments and Input from the Public

Adjourn

Regulatory Guides - Background

- Purpose
 - Assist stakeholders in understanding and complying with NRC rules and regulations
 - Describe methods NRC staff have determined to be acceptable (but not required) for meeting regulations
 - Provide for licensing efficiency and regulatory stability
 - **RGs do not impose requirements**



Regulatory Guides - Background

- Benefit – If not required, why do we have them?
 - Conserves resources and simplifies approval process because the guide describes ways the staff has already determined to be acceptable to meeting regulations
 - Relieves burden of demonstrating that approved methods satisfy applicable NRC requirements
 - In safety evaluations, the staff recognizes that approved methods were used by applicant/licensee and evaluates the outcome of those methods
 - Without RG, licensee must first establish that a method is acceptable

Regulatory Guides - Background

- Update Process Highlights
 - Identifying the need for new guidance
 - Development of the technical basis
 - Development of the Draft Regulatory Guide
 - Development of supporting documents
 - RGs that support rulemakings
 - Internal and external review
 - Publication (Pre-decisional Draft, DG and Final RG)

