PUBLIC SUBMISSION

SUNI Review Complete
Template=ADM-013
E-RIDS=ADM-03

ADD: Carolyn Lauron
Mary Neely
Comment (3)
Publication Date: 11/24/2025
Citation: 90 FR 53009

As of: 1/13/26, 9:17 AM
Received: December 19, 2025
Status: Pending_Post
Tracking No. mjd-d6xu-vkh5
Comments Due: December 24, 2025
Submission Type: Web

Docket: NRC-2025-0149
Draft Interim Staff Guidance: DSS-ISG-2025-XX, "Treatment of Certain Loss-of-Coolant Accident Locations as Beyond-Design-Basis Accidents"

Comment On: NRC-2025-0149-0001
Draft Interim Staff Guidance: Treatment of Certain Loss-of-Coolant Accident Locations as Beyond-Design-Basis Accidents

Document: NRC-2025-0149-DRAFT-0003
Comment on FR Doc # 2025-20707

Submitter Information

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Organization: Nuclear Utility Group on Equipment Qualification

General Comment

See attached file(s)

Attachments

12-19-25 -- NUGEQ Comments on draft DSS-ISG-XX

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December 19, 2025

Mr. Victor Cusumano,
Deputy Director, Division of Safety Systems
Office of Nuclear Reactor Regulation,
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subj: Comments and Bases for Comments by the ***Nuclear Utility Group on Equipment Qualification*** Regarding Draft Interim Staff Guidance (ISG), DSS–ISG–XX, "Treatment of Certain Loss-of-Coolant Accident Locations as Beyond-Design- Basis Accidents." Docket ID: NRC-2025-0149.

Dear Mr. Cusumano:

The Nuclear Utility Group on Equipment Qualification ("NUGEQ" or "Group")[1] hereby submits comments on the draft ISG, DSS–ISG–XX, "Treatment of Certain [LOCA] Locations as Beyond-Design- Basis Accident" in accordance with *Federal Register* notice published on November 24, 2025. *See* 90 Fed. Reg. 53,009. DSS–ISG–XX seeks to "communicate the key safety principles that would enable the NRC staff [Staff] to determine that certain break locations that would normally be analyzed as design-basis loss-of-coolant accidents (LOCAs) for light-water reactors can be treated as beyond design-basis accidents."

OVERVIEW OF COMMENTS

NUGEQ provides ten comments in the attached comment form for Staff consideration. Specifically, we note that the draft ISG (once finalized) would provide guidance to the Staff "until the Commission approves a long-term resolution of the associated technical issues, potentially through rulemaking" for reviewing justifications that design-basis LOCAs need not be postulated at all conceivable locations. This could effectively result in potential case specific exemptions from 10 CFR 50.46 (as currently written) determined based upon non-binding, general guidance. Given the uncertainty associated with rulemaking, NUGEQ seeks clarity with respect to how Staff's acceptance of a licensee's justification for establishing specific break

[1] The Group represents approximately 90% of the operating nuclear power plants in the United States. The Group was founded in 1981, as the NRC staff was evaluating and planning the ultimate promulgation of 10 CFR 50.49, "Environmental qualification of electric equipment important to safety for nuclear power plants." Since its inception, the Group has been actively involved in the development and implementation of licensee EQ programs, and in interaction with the NRC, regarding evolving NRC requirements and guidance. The Group most recently also was actively involved in the recent NRC DBA EQ program inspections and worked with licensees and the NRC in addressing implementation issues associated with those inspections.

locations being defined as beyond design basis would be memorialized into a plant's licensing basis if a rule revision is not promulgated.

In addition, we respectfully submit that the guidance (once finalized) should list specific attributes to be examined by the reviewer and the basis for those attributes. Instead of presenting examples in the draft ISG of "considerations," the final guidance will be stronger if it delineates the minimum topics, criteria, or considerations that would need to be addressed to demonstrate reasonable assurance of adequate protection.

Lastly, the Group agrees with the position that break locations classified as beyond design-basis would not need to be addressed by EQ Programs under 10 C.F.R. § 50.49. However, the draft ISG (once finalized) should acknowledge that equipment survivability may still be applicable for certain equipment and instrumentation.

If you have any questions regarding this request, please contact Thomas R. Millar (tmillar@winston.com or (202) 282-5334).

Respectfully submitted,

Thomas R. Millar, Winston & Strawn LLP
Counsel to the Nuclear Utility Group on Equipment Qualification

Attachment

NUGEQ Comments on DSS-ISG-2025-xx

Reviewed Document: U.S. NRC Draft Interim Staff Guidance, "Treatment of Certain Loss-of-Coolant Accident Locations as Beyond-Design-Basis Accidents," November, 2025

NRC Docket # NRC-2025-0149

COMMENTS, QUESTIONS, AND OBSERVATIONS					
No.	Comment Type[note 1]	Section / Page	Current Wording	Comment or Feedback	Basis for Comment or Proposed Changes (as applicable)
1	Q	Background / pg 1 & 2	*"The NRC is currently considering circumstances under which an alternative interpretation of the design-basis LOCA spectrum may be found to be acceptable. For some applications now under review and anticipated to be submitted in the near to medium term, designers have sought to holistically reduce LOCA risks (e.g., reduced numbers of penetrations, larger volumes of water above the core, extended coping times, passive cooling systems). In consideration of design specific information, the NRC can review justifications that design-basis LOCAs need not be postulated at all conceivable locations."*	Comment: This draft ISG (once finalized) would provide guidance to staff for reviewing justifications that design-basis LOCAs need not be postulated at all conceivable locations, which effectively results in a case specific exemption from 10 CFR 50.46 (as currently written). Please explain how staff acceptance of a licensee's justification for establishing specific break locations being defined as beyond design basis would be incorporated into a plant's licensing basis if rulemaking isn't implemented. This comment seeks clarification for how a licensee or applicant can achieve equivalent regulatory confidence without an exemption from the LOCA evaluation model requirements of 50.46, including the legal basis of Staff's authority to grant relief from the requirements of 50.46 based upon its guidance. Also see Comments 3 and 7.	This comment stems from the wording in the Rationale section states that "The staff plans to employ the framework outlined in this ISG (once it becomes effective after public comment) until the Commission approves a long-term resolution of the associated technical issues, potentially through rulemaking."
		Rationale / pg 2	*"The NRC staff plans to review applications in accordance with the NRC interpretation in this draft guidance (once it becomes effective) and, **if the staff determines the application includes adequate justification, <u>an exemption from the LOCA evaluation model requirements of 10 CFR 50.46 would not be needed.</u>"***		
2	C	General Comment	N/A	Comment: DSS-ISG-2025-XX makes no mention of whether the guidance (once finalized) will be incorporated into NUREG-0800. Please clarify whether the guidance in DSS-ISG-2025-XX will eventually be incorporated into NUREG-0800 "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition."	NUREG-0800 is "intended to be a comprehensive and integrated document that provides the reviewer with guidance that describes methods or approaches which the staff has found acceptable for meeting [NRC] requirements." NUREG-0800 is "also intended to make information regarding regulatory matters widely available, to enhance communication with interested members of the public and the nuclear power industry; and, to improve the public's understanding of the staff review process." Source: Office Instruction NRO-REG-301, "Development and Issuance of Interim Staff Guidance for the Office of New Reactors"

Note 1: Codes for Types of Comments - (C) = Comment, (Q) = Question, (O) = Observation, (E) = Editorial

NUGEQ Comments on DSS-ISG-2025-xx

COMMENTS, QUESTIONS, AND OBSERVATIONS					
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3	C	Guidance / pg 3, 4, & 5	N/A	Comment: The guidance does not list specific attributes to be examined by the reviewer (e.g. for the “specific features or design considerations”) and the basis for such attributes. Instead of presenting examples of “considerations,” Staff’s guidance would be more instructive if the guidance (once finalized) delineates the minimum topics, criteria, or considerations that must be addressed to demonstrate reasonable assurance of adequate protection and includes a definition for the “specific features or design considerations.”.	

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NUGEQ Comments on DSS-ISG-2025-xx

COMMENTS, QUESTIONS, AND OBSERVATIONS					
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4	C	Rationale / pg 3 footnote 1	*"If excluded from the design basis for the purposes of calculating ECCS cooling performance under 10 CFR 50.46, a LOCA would also be excluded from the design-basis for the purposes of all other requirements that consider the consequences of LOCAs. Examples of these requirements include* *10 CFR 50.49, "Environmental qualification of electric equipment important to safety for nuclear power plants, ... "*	Comment: NUGEQ agrees with the position that break locations classified as beyond design-basis would not need to be addressed by EQ Programs under 10 CFR 50.49. However, this draft ISG (once finalized) should acknowledge that equipment survivability may still be applicable for certain equipment and instrumentation.	Consistency with SECY-93-087, SECY-90-016, 10 CFR 50.44 and RG 1.7 R3. The following excerpts are provided as examples: SECY-93-087: *Therefore, the staff recommends that the Commission approve the position that passive plant design features provided only for severe-accident mitigation need not be subject to the environmental qualification requirements of 10 CFR Section 50.49;…* SECY-90-016: *In instances where safety-related equipment provided for DBAs is relied upon to cope with severe-accident situations, there should also be a high confidence that this equipment will survive severe-accident conditions for the period that it is needed to perform its intended function.* *During the review of the credible severe-accident scenarios for ALWR designs, the staff will evaluate the ALWR vendors identification of the equipment needed to perform mitigative functions and the conditions under which the mitigative systems must operate. Equipment survivability expectations under severe-accident conditions should consider the circumstances of applicable initiating events (such as station blackout or earthquakes) and the environment (including pressure, temperature, and radiation) in which the equipment is relied upon to function.* 10 CFR 50.44(b)(4)(ii): *Equipment for monitoring hydrogen must be functional, reliable, and capable of continuously measuring the concentration of hydrogen in the containment atmosphere following a significant beyond design-basis accident for accident management, including emergency planning.* Regulatory Position C.1 of RG 1.7 R3: *Equipment survivability expectations under severe accident conditions should consider the circumstances of applicable initiating events (such as station blackout 1 or earthquakes) and the environment (including pressure, temperature, and radiation) in which the equipment is relied upon to function.*

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NUGEQ Comments on DSS-ISG-2025-xx

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5	C	Rationale / pg 3 footnote 1	*". . . and GDCs 19, 35, 38, 41, 44, and 50. None of these NRC regulations replicate the prescriptive requirements in 10 CFR 50.46 that define the spectrum of LOCAs that must [be] analyzed*."	Comment: GDC-4 should also be listed as it is specific to the environmental and dynamic effects design basis. See also Comment 10.	Consistency with the position of 10 CFR 50.49.
6	Q	Background / pg 1	"*Further, the NRC has begun rulemaking efforts to apply relaxed analytical methods to certain classes of LOCAs*."	Question: Is there an NRC activity tracked in its management system for the required rule-making that supports this ISG?	The ISG refers in multiple parts (as does the FR Notice) to rulemaking to allow codification of the ISG, yet there is no FR Notice or timeline that is described.
7	C	Guidance / pgs 3, 4, & 5	N/A	Comment: The draft ISG does not mention or address whether the guidance in Appendix K of Part 50 regarding the approach presented in the draft ISG affects the spectrum of possible pipe breaks. Please clarify if this ISG has any impact on Appendix K or whether any related rulemaking also would involve changes to Appendix K.	Section I.C.1 of Appendix K specifies that "In analysis of hypothetical loss-of-coolant accidents, a spectrum of possible pipe breaks shall be considered. ***This spectrum shall include instantaneous double-ended breaks ranging in cross-sectional area up to and including that of the largest pipe in the primary coolant system***."
8	C	Guidance / pg 3	"*This ISG describes a framework for the mechanistic considerations that the staff could consider in determining whether an application has justified certain **break locations** as beyond-design-basis LOCAs*." *" To apply this approach to a given location, the staff would consider whether the application includes sufficient information to form a basis for the NRC to make a safety determination that **certain break locations in the reactor coolant system** can be analyzed as beyond-design-basis accidents rather than as part of the design-basis LOCA spectrum under 10 CFR 50.46 ."*	Comment: The draft ISG appears to focus on LOCAs as being a spectrum of pipe break sizes and locations. Please clarify if this guidance is specifically limited to pipe rupture events or whether this can also apply to other equipment failures that can result in a LOCA (e.g., an inadvertent or stuck open relief valve).	
9	C	Guidance / pages 4 & 5	"*2. Design and operational programs provide assurance that failures at the location of interest are highly unlikely*."	Comment: Consider expanding the guidance (once finalized) related to the mechanistic considerations provided in the guidance Section 2 to reinforce that the design and operational programs that provide assurance that failures at the location of interest are highly unlikely will also ensure that this assurance is maintained over the life of the station.	

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NUGEQ Comments on DSS-ISG-2025-xx

COMMENTS, QUESTIONS, AND OBSERVATIONS					
No.	Comment Type[note 1]	Section / Page	Current Wording	Comment or Feedback	Basis for Comment or Proposed Changes (as applicable)
10	C	Guidance / pages 3, 4, & 5	N/A	Comment: The guidance related to the mechanistic considerations (once finalized) should include wording that ensures consistency with how 10 CFR 50.44 and RG 1.7 differentiate between design basis and beyond design basis from a combustible gas control perspective.	Footnote 1 on page 2 of the draft ISG indicates that the requirements of GDC 41, Containment atmosphere cleanup" would also be excluded. Clarification is warranted to communicate that while the design-basis aspects are excluded for consideration of breaks classified as beyond design basis, there can still be requirements related to equipment relied upon to function during beyond design basis accidents.

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