

THOMAS ZACHARIAH
Project Manager

1201 F Street, NW, Suite 1100
Washington, DC 20004
P: 202.739.8058
tz@nei.org
nei.org



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May 20, 2016

Ms. Cindy K. Bladey
Chief, Rules, Announcements, and Directives Branch
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Industry Comments on Draft Interim Staff Guidance (ISG) for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment (JLD-ISG-2016-01, Docket ID NRC-2016-0084)

Project Number: 689

On April 22, 2016, the NRC issued a Federal Register Notice soliciting public comments on the draft Interim Staff Guidance (ISG) Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment. The ISG endorses industry guidance described in NEI 16-05, Revision 0, "External Flooding Assessment Guidelines," and provided additional clarification and guidance on performed external flooding focused evaluations and integrated assessments.

The NEI Fukushima Flooding Task Force (FFTF) has been meeting with the NRC on this document for several months. The attached comments reflect the results of these meetings to the extent that the topics were addressed. The Nuclear Energy Institute (NEI) submits these comments on behalf of the nuclear energy industry. The industry intends on working with NRC staff to address many of these clarifications and comments through a revision of NEI 16-05 or in the finalization of the ISG and requests that the NRC staff schedule a public meeting to further discuss the attached comments.

SUNSI Review Complete
Template = ADM - 013
E-RIDS= ADM-03
Add= J. Uribe (JFU2)

Ms. Cindy K. Bladey
May 20, 2015
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If there are any questions on this material, please contact me at 202-739-8058; txz@nei.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas Zachariah". The signature is written in a cursive style with a large initial "T" and a long, sweeping underline.

Thomas Zachariah

c: Mohamed Shams, NRR/JLD/PPSD/HMB, NRC
Eric Bowman, NRR/JLD, NRC
Juan Uribe, NRR/JLD/JHMB, NRC
Jack Davis, NRR/JLD, NRC
Fukushima Response Steering Committee
Fukushima Flooding Task Force
Fukushima Points of Contact

Industry Technical Comments on JLD-ISG-2016-01				
Comment Number	Document Section	Relevant Text	Issue	Proposed Resolution
1	Enclosure 1: Section 1	Licenseses may use the methodology of NEI 16-05, with clarifications, upon receipt of the NRC letter providing the flood hazard parameters for use in the Mitigating Strategies Assessments of NEI 12-06, Appendix G.	Moving forward with the External Flooding Integrated Assessment Process prior to receiving NRC review and approval of the inputs may result in rework and added cost to the licenseses and the NRC. It is not clear in the interim letters that they are sufficient for use in the FE/IA Process. The letters do not provide acceptance from a comprehensive review of all information provided by the licensee. It is understood that use of the interim letters are limited to the information explicitly contained in the letter. Much of the interim letters only reported flood level and did not formally accept associated effects and duration parameters. The December 3, 2012 NRC letter stated that the FE/IA process is triggered through a comparison of the CLB and BDB flood levels as well as all associated effects. Item 4 note from this letter states: "The phrase flood height and associated effects is defined in the integrated assessment ISG as the maximum Stillwater surface elevation plus the following factors; wind waves and run-up effects; hydrodynamic loading, including debris; effects caused by sediment deposition and erosion; concurrent site conditions, including adverse weather conditions; groundwater ingress; and other pertinent factors."	Clarification should state "Licenseses may use the methodology of NEI 16-05, with clarifications, upon receipt of the NRC letter providing the flood hazard parameters for use in the Mitigating Strategies Assessments of NEI 12-06, Appendix G. Flood mechanisms that are required to be evaluated in the process described in NEI 16-05 are those identified in the interim letters as being non-bounded. For these mechanisms, licenseses should confirm that information not explicitly addressed in the interim letters such as the event duration parameters and associated effects have been accepted and documented (e.g. Staff Assessments, Audit Reports, or other official correspondence) by the NRC prior to initiation of the process."

Industry Technical Comments on JLD-ISG-2016-01				
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2	Enclosure 1: Section 3.1 and Section 4.2	Section B.2.1.5 to NEI 16-05 relies on the guidance of NEI 12-07, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features," and NRC letter, "Request for Additional Information [RAI] Associated with Near Term Task Force Recommendation 2.3, Flooding Walkdowns," dated December 23, 2013 (ADAMS Accession No. ML13325A891) for the evaluation of adequacy of plugs and penetration seals. In applying the considerations of the RAI, item 4, licensees should use the reevaluated flooding parameters rather than the current licensing basis flood height.	NEI 16-05 Appendix B.2.1.5 specifically states, .."substituting the reevaluated flood parameters for the licensing basis flood parameters where appropriate." The staff position in JLD-ISG-2016-01 section 3.1 repeats the intent with a similar statement, "licensees should use the reevaluated flooding parameters rather than the current licensing basis flood height.", and therefore causes confusion on what is intended to be clarified.	Clarification should be removed or it should state what specifically is expected beyond the language in Section B.2.1.5 of NEI 16-05.
3	Enclosure 1: Section 4.3	Licensees should assess protection of key SSCs as defined in NEI 16-05 with the considerations described in Section 4.2. Protection should include considerations described in NEI 16-05, Appendix B. If it is not practical to protect key SSCs from the LIP hazards, licensees should attempt to mitigate the impact of the LIP on key SSCs. Demonstration of mitigation capability could include reliance on the mitigating strategies	The statement "if it is not practical to protect key SSCs" is ambiguous and expectations on how to determine what is practical and what isn't needs to be clearer.	Clarification should state "Licensees should assess protection of key SSCs as defined in NEI 16-05 with the considerations described in Section 4.2. Protection should include considerations described in NEI 16-05, Appendix B. If licensees rely on mitigation capabilities for the LIP mechanism rather than protection, a justification should be provided. Demonstration of mitigation capability could include reliance on the mitigating strategies assessment for LIP."

Industry Technical Comments on JLD-ISG-2016-01				
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		assessment for LIP.		
4	Enclosure 1: Section 5.1 and Section 5.2; Enclosure 2	In addition to the key elements listed in NEI 16-05, the licensee should provide corresponding information to address the critical flood elevations identified for the flood mechanism under consideration under NEI 16-05, Section 6.3.1, and this document, Section 3.	It is not clear what is meant by "corresponding information." Section 6.3.1 of NEI 16-05, under the Initial Evaluation of Flood Impacts, it states "Identify the critical flood elevations that impact Key SSCs. Determination of critical flood elevations should consider hydrostatic and hydrodynamic loads." The expected additional corresponding information needs to be more specific.	Clarification should be removed or it should state "The licensee should provide information to describe the consequential flooding conditions for each mechanism. The consequential flood conditions represent the point at which the flood exceeds the capability of protection features, including considerations for flood level, duration and/or associated effects, such that Key SSCs may be impacted."
5	Enclosure 1: Section 5.1; Enclosure 2	NEI 16-05, Appendix D provides available methods for estimating frequencies greater than 10 ⁻⁴ /year. When applying these methods, the licensees should consider the attributes described in Enclosure 2 of this ISG	Enclosure 2 of the ISG provides a high level guidance in the development of a full PFHA. The process described in NEI 16-05 does not require or utilize a full PFHA and the inclusion of Enclosure 2 only adds confusion of what is expected of the licensees as it does not provide any additional value to the ISG. The language in the ISG states that "the licensees should consider the attributes described in Enclosure 2" in addition to the guidance provided in NEI 16-05 Appendix D. However, the ISG does not provide any clarity on which specific attributes need to be considered particularly for annual exceedance probabilities greater than 10 ⁻⁴ /yr.	The staff should remove Enclosure 2 in its entirety or greatly simplify it to only the specific attributes that they would like the licensee to consider for annual exceedance probabilities greater than 10 ⁻⁴ /yr.

Industry Technical Comments on JLD-ISG-2016-01				
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6	Enclosure 1: Section 5.1	Information submitted to the NRC should include the frequency of exceedance for the critical flood elevations or (if appropriate) should identify that the frequency of exceedance for the critical flood elevations is estimated to be less than 1E-4/year.	Use of a Path 4 evaluation, requires licensees to demonstrate effective mitigation for all aspects of the flood mechanism. For mechanisms other than dam failure, frequencies should only be required to be developed for reaching or exceeding the consequential flooding conditions rather than all critical flood elevations. See comment 7 for more information regarding consequential flooding. Development of frequencies for dam failures would require a significant effort. Historical dam failure frequency studies have shown generic failure frequencies on the order of 1E-4/year. Uncertainties, availability of information, and level of effort required to refine these values, along with the expected outcome, would not provide additional insight in the Phase 2 decision making process beyond what is already available to the NRC staff. Discussion of likelihood of dam failures for consequential flooding conditions should only be limited to a qualitative discussion and a full quantitative evaluation should not be required.	Clarification should state "Information submitted to the NRC should include the frequency for reaching and exceeding the consequential flooding conditions for each mechanism or (if appropriate) should identify that the frequency is estimated to be less than 1E-4/year. If a quantitative frequency cannot be obtained, a qualitative discussion regarding the likelihood of reaching and exceeding the consequential flooding conditions should be provided. The consequential flood conditions represents the point at which the flood exceeds the capability of protection features, including considerations for flood level, duration and/or associated effects, such that Key SSCs may be impacted."

Industry Technical Comments on JLD-ISG-2016-01				
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7	Enclosure 1: Section 5.2	Development and characterization of the scenarios under NEI 16-05, Section 8.2.2, should include scenarios for the flooding mechanism under consideration at the critical flood elevations identified under NEI 16-05, Section 6.3.	In discussions at NRC public meetings, it is evident that there is an inappropriate interpretation that identifying critical flood elevations is the same as identifying the consequential flood for a mechanism. Critical flood elevations are based on the location and elevations that flood waters would need to reach to potentially fail Key SSCs. Typically, these elevations would be the same for all mechanisms and they do not take into consideration the flood mechanism or source. A given site may have multiple critical flood elevations depending on number on unique elevations where Key SSCs and need flood protection exist. If a flood reaches any of these elevations, the consequence to the plant may be different and more severe without adequate protection features. A flood that reaches the most limiting critical flood elevation may be considered the consequential flood for a given mechanism as it would likely be the least severe flood that could fail a key safety function. Given this, scenarios should not be required to be developed at all the critical flood elevations as the flood mechanism may not reach all critical flood elevations and single scenario may be able to be developed for multiple flood elevations.	Clarification should read "Development and characterization of the scenarios under NEI 16-05, Section 8.2.2, should include the lowest consequential flood scenario for each flooding mechanism. This consequential flooding scenario represents the point at which the flood exceeds the capability of protection features such that Key SSCs may be impacted."
8	Enclosure 1: Section 5.2	Ensure context and caveats related to the numerical values in Table D-1 (as described in USBR, 2004) and Figure D-1 as well as the methods and references described in Table D-2 are addressed.	It is not clear what is meant by "context and caveats." From discussions at NRC public meetings, the understood intent is that these contexts and caveats are ones that may be included in the original referenced documents contained in Figure D-1 and Table D-2	Clarification should state "Ensure context and caveats from the source documents related to the numerical values in Table D-1 (as described in USBR, 2004) and Figure D-1 as well as the methods and references described in Table D-2 are considered prior to use."

Industry Technical Comments on JLD-ISG-2016-01				
Comment Number	Document Section	Relevant Text	Issue	Proposed Resolution
9	Enclosure 1: Section 5.2	To establish the frequency of exceeding a given measure of flood severity, the licensee should aggregate the contributions from a range of potential flooding mechanisms and relevant contributing events and should not limit the assessment to development of frequencies associated with deterministic event combinations (e.g., combinations identified in NUREG/CR-7046) shown in Section D.3	It is not clear what range of potential flooding mechanisms would be included and that this should be limited to combined effect flood mechanisms being evaluated through Path 5.	Clarification should read "To establish the frequency of exceeding a given measure of flood severity for combined effect flood mechanisms being evaluated in Path 5, the licensee should aggregate the contributions from relevant contributing events and should not limit the assessment to development of frequencies associated with deterministic event combinations shown in the examples of Section D.3. (e.g., other combinations identified in NUREG/CR-7046)"
10	Page 3 Background Section; Page 7 References	13. Nuclear Energy Institute, NEI 16-05, Revision 0, "External Flooding Integrated Assessment Guidelines," April 2016, ADAMS Accession No. ML16105A327.	ML number is as not the version of NEI 16-05 submitted for endorsement on 4/21/16.	Correct ML number to the version of NEI 16-05 submitted under NEI letter dated 4/21/2016

Industry Technical Comments on JLD-ISG-2016-01				
Comment Number	Document Section	Relevant Text	Issue	Proposed Resolution
11	Enclosure 1 Section 2	Staff Position includes "Appendix A, Tables A-1 through A-3 provide considerations for licensees in identifying potential refinements..."	NEI 16-05 Revision 0, Appendix A includes a Table A-1 and A-2, but no longer includes a Table A-3.	Delete reference to Table A-3