NRC Responses to Public Comments

Revision to Japan Lessons-Learned Division Interim Staff Guidance JLD-ISG-2016-01: Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment

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NRC Responses to Public Comments
Interim Staff Guidance: Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment

Table of Contents

I. Introduction 3

II. Comment Submissions 3

III. Public Comments and NRC Response 3

1.0 General Comments 4
2.0 Development and Implementation Process 5
2.1 Evaluation of flood protection features 8
2.1.1 Evaluation of plugs and penetration seals 8
2.1.2 Protection of key SSCs 9
2.1.3 Evaluation of event frequency estimation 10

I. Introduction

This document presents the U. S. Nuclear Regulatory Commission's (NRC) responses to comments received on the Interim Staff Guidance: Guidance for Activities Related to Near-Term Task Force Recommendation 2.1, Flooding Hazard Reevaluation; Focused Evaluation and Integrated Assessment. The Interim Staff Guidance (ISG) was published April 22, 2016 (81 FR 23758). The public comment period closed on May 23, 2016.

Comment submissions on this draft interim staff guidance revision are available electronically at the NRC's Electronic Reading Room at http://www.nrc.gov/reading-rm/adams.html. From this page, the public can gain entry into ADAMS, which provides text and image files of NRC's public documents.

This comment resolution document (CRD) is also available electronically at the NRC's Electronic Reading Room under ADAMS Accession No. ML16165A103. The final ISG can be found in ADAMS Accession No. ML16162A301.

II. Comment Submissions

The NRC received 1 comment submittal package containing 11 individual comments during the public comment period described on Section 1 of this document and a late submittal containing 1 additional comment. The NRC-designated identifier for each unique comment submission, the name of the submitter, the submitter's affiliation (if any), and the ADAMS accession number is provided in Comment Submission Table included in this document.

Comment Submitter Summary Table		
Name	Affiliation	ADAMS Accession No
Thomas Zachariah	Nuclear Energy Institute (NEI)	ML16147A088
David P. Helker	Exelon Generation Company, LLC	ML16158A371

III. Public Comments and NRC Response

As, stated, the NRC received 11 comment submissions from NEI. The NRC has prepared a response for each comment.

1.0 General Comments		
Commenter	**Comment**	**NRC Response**
Helker 1	Exelon fully supports the comments submitted by the NEI (ML16147A088) and appreciates the opportunity for comment.	The NRC staff acknowledges receipt of this comment, but notes that it proposes no modifications to the ISG. No changes were made as a result of this document; changes made as a result of the underlying NEI comments are discussed in conjunction with those comments
Zachariah 10	Page 3 Background Section; Page 7 References Comment: The reference listed as: *13. Nuclear Energy Institute, NEI 16-05, Revision 0, "External Flooding Integrated Assessment Guidelines," April 2016, ADAMS Accession No. ML16105A327.* Has an ADAMS Accession Number that does not correspond to the version of NEI 16-05 submitted for endorsement on 4/21/2016. The ISG should be revised to include the correct ML number to the version of NEI 16-05 submitted under NEI letter dated 4/21/2016.	The NRC staff agrees with this comment, but notes that it is overcome by events due to the submittal of NEI 16-05, Revision 1. The final version of JLD-ISG-2016-01 has been revised to reflect the new version of NEI 16-05.

Zachariah 11	Enclosure 1, Section 2 Comment: The ISG staff position includes the statement that "Appendix A, Tables A-1 through A-3 provide considerations for licensees in identifying potential refinements…" However, NEI 16-05 Revision 0, Appendix A includes a Table A-1 and A-2, but no longer includes a Table A-3. The reference to Table A-3 should be deleted.	The NRC staff agrees with this comment and has modified the final version of the ISG to reflect it.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
Zachariah 1	Enclosure 1: Section 1 Implementation: 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. Much of the interim letters only reported flood level and did not formally accept associated effects and duration parameters. Comment: 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 licensees and the NRC. Industry suggests this paragraph be worded as follows:	The NRC staff disagrees with this comment because the cited text of JLD-ISG-2016-01 is intended to be permissive in nature. The NRC has imposed no requirements on licensees to await a documented staff evaluation of the information that the licensees chose to submit along with the integrated assessments under the prior guidance; any licensees having concerns in this area should contact their respective project managers in the Japan Lessons-Learned Division in order to confirm the appropriate path forward. No changes were made to the ISG to address this comment.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	"Licensees 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, licensees 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."	
Zachariah 4	Enclosure 1: Section 5.1 and Section 5.2; Enclosure 2 The ISG states that "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." Comment: 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 [structures, systems and components]. Determination of critical flood elevations should consider hydrostatic and hydrodynamic loads." The expected additional corresponding information needs to be more specific or the clarification should be removed. Industry suggests this paragraph be worded as follows: "The licensee should provide information to describe the consequential flooding conditions for each mechanism. The consequential flood conditions	The NRC staff agrees with this comment and notes that the underlying text in NEI 16-05 has been modified to address the information need. The final version of JLD-ISG-2016-01 has been changed to reflect resolution of this comment.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	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."	
Zachariah 7	Enclosure 1: Section 5.2 Implementation: The ISG states that “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.” Comment: 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.	The NRC staff agrees with this comment and notes that the underlying text in NEI 16-05 has been modified to address the information need. The final version of JLD-ISG-2016-01 has been changed to reflect resolution of this comment.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	Industry suggests this paragraph be worded as follows: "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."	
2.1 Evaluation of flood protection features		
Commenter	**Comment**	**NRC Response**
2.1.1 Evaluation of plugs and penetration seals		
Zachariah 2	Enclosure 1: Section 3.1 and Section 4.2 Implementation: 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. Comment: 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	The NRC staff agrees with this comment and has modified JLD-ISG-2016-01 to address the comment.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	flooding parameters rather that 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.	
2.1.2 Protection of key SSCs		
Zachariah 3	Enclosure 1: Section 4.3 <u>Implementation:</u> The ISG states that "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 [local intense precipitation] 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 assessment for LIP." <u>Comment:</u> 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. <u>Industry suggests this paragraph be worded as follows:</u> "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	The NRC staff disagrees with this comment. As described in JLD-ISG-2016-01, licensee approaches to address an unbounded LIP hazard will be reviewed using engineering and operational judgement and following the flooding action plan of COMSECY-15-0019. No changes have been made to the final version of JLD-ISG-2016-01 in order to reflect it.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	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."	
2.1.3 Evaluation of event frequency estimation		
Zachariah 5	Enclosure 1: Section 5.1; Enclosure 2 <u>Implementation:</u> The ISG states that “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” <u>Comment:</u> 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.	The NRC staff agrees, in part, with this comment and notes that appropriate portions of the draft JLD-ISG-2016-01, Enclosure (2) have been incorporated in NEI 16-05, Revision 1, Appendix D. JLD-ISG-2016-01 has been modified to reflect the resolution of this item.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
Zachariah 6	Enclosure 1: Section 5.1 Implementation: The ISG states that “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.” Comment: 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. 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. Industry suggests this paragraph be worded as follows: "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	The NRC agrees in part with this comment and notes that NEI 16-05, Revision 1 has been modified to reflect the resolution of this issue. JLD-ISG-2016-01 has been modified to reflect the revision to NEI 16-05.

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	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."	
Zachariah 8	Enclosure 1: Section 5.2 Implementation: The ISG states that the licensee should “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.” Comment: 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 Industry suggests this paragraph be worded as follows: "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."	The NRC staff agrees with this comment and has modified JLD-ISG-2016-01 to reflect it.
Zachariah 9	Enclosure 1: Section 5.2 Implementation:	The NRC staff agrees with this comment and notes that NEI 16-05 has been modified to reflect

2.0 Development and Implementation Process		
Commenter	**Comment**	**NRC Response**
	The ISG states that “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.” <u>Comment:</u> 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. <u>Industry suggests this paragraph be worded as follows:</u> "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)"	resolution of this issue. JLD-ISG-2016-01 has been modified to reflect this state of affairs.