



# **JLD-ISG-2016-01 Comments - Guidance for Closure of Flooding Hazard Reevaluation through Focused Evaluation Process**

June 9, 2016

# Purpose

- To discuss comments received on Draft JLD-ISG-2016-01; NRC-2016-0084
- Intent is to allow transition of clarifications from JLD-ISG-2016-01 to NEI 16-05 in order to simplify licensee implementation of the process

# Background

- Draft JLD-ISG-2016-01 made available for comment 4/22/16 (81 FR 23758)
- Comment period ended 5/23/16
- One set of comments received
  - NEI Letter dated 5/20/16 (ML16147A088)
  - Included a request for a public meeting to facilitate revision of NEI 16-05 and discuss the comments

# Discussion of Comments

- Staff discussion of the resolution of comments is predecisional; resolution will be made final with the publication of the final version of JLD-ISG-2016-01

# NEI Comment 1

- Comment proposed modification to ISG Enclosure 1, Section 1 text, which reads “Licensees may use the methodology of NEI 16-05, with clarifications, upon receipt of the NRC letter providing flood hazard parameters for use in the [MSAs].”
- Proposed wording would be more limiting than appears to be necessary. The ISG text was intended to be permissive in nature rather than mandating additional submittals and reviews prior to FE/IA performance. Licensees having concerns in this area should consult with their JLD PMs for the flooding reevaluations.

## **NEI Comment 2**

- Comment was with regard to clarifications in Enclosure 2, Sections 3.1 and 4.2 for flooding penetration seals.
- No change appears necessary to NEI 16-05 for resolution of this comment.

## **NEI Comment 3**

- Comment proposed modification to ISG Enclosure 1, Section 4.3 regarding protection of Key SSCs from LIP hazard.
- Proposed wording appears to be acceptable to use in revising NEI 16-05, Section 7.3.

## **NEI Comment 4**

- Comment proposed modification to ISG Enclosure 1, Sections 5.1 and 5.2, or removal of the clarification regarding critical flood elevations/consequential flooding.
- To be discussed with Comment 6

## **NEI Comment 5**

- Comment recommends removal or simplification of ISG, Enclosure 2
- Simplified working version of the enclosure is provided on the next slide.

## Working Version of Simplified Enclosure 2

**Purpose:** The purpose of this enclosure is to define necessary attributes of a probabilistic assessment that will yield an estimate of the flooding hazards associated with annual frequencies of exceedance in the range  $1E-4$  to  $1E-3$ . This enclosure focuses on development of estimates that approximate a mean hazard. These attributes are defined within the context of the existing state of practice and available data, models, and methods, including the catalog of methods described in NEI 16-05, Appendix D.

1. **Analysts:** The analysts performing the assessment should have expertise in the flood-causing mechanisms considered (e.g., hydrologic scientists, hydraulic/water resources engineers, meteorologists, oceanographers) and should be capable of understanding and incorporating alternative interpretations of data, models and methods used to estimate the annual frequency of exceedance of a given parameter(s) representing flood severity.
2. **Models and methods:** The licensee should use models and methods consistent with the existing state of practice for the range of annual exceedance frequencies considered, including use of statistical or probabilistic methods augmented by a realistic mechanistic treatment of hazards (as available).
3. **Data:** The licensee should: (1) use relevant information for the phenomena consistent with the models and methods selected and (2) consider and address the limitations of available information.
4. **Uncertainty:** The licensee should identify and address important sources of aleatory variability and epistemic uncertainty (e.g., alternate data sources, options for filtering data, or alternate functional forms for probability distributions) for each flood mechanism. The licensee may utilize simplifying and bounding assumptions to address uncertainty, but should also clarify how they affect key insights and conclusions. Sensitivity studies examining the effect of key components and assumptions on flood hazard estimates may be used to address epistemic uncertainty,

**Documentation:** The licensee should document: the approach used to perform the assessment; the basis for data, models, and methods used (or excluded); key assumptions; treatment of uncertainties; and the results of the assessment.

## NEI Comment 6

- Comment proposed modification of ISG, Enclosure 1, Section 5.1.
- Suggested text to add to NEI 16-05, Section 8.1 for this clarification:

*Information submitted to the NRC should include the frequency ~~of for~~ reaching and exceeding the flood severity associated with the consequential flooding scenario 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~~ estimated using available information for Path 4, a qualitative discussion regarding the likelihood of reaching and exceeding the consequential flooding conditions should be provided. The consequential flooding scenario condition represents the condition point at which the flood severity exceeds the capability of protection features, including considerations for flood level, duration and/or associated effects, such that Key SSCs may be impacted.*

## NEI Comment 7

- Comment proposed modification of ISG, Enclosure 1, Section 5.2.
- Suggested text to add to NEI 16-05, Section 8.2.2 for this clarification:

*Development and characterization of the scenarios under NEI 16-05, Section 8.2.2, should include the ~~lowest~~ consequential flooding~~ing~~ scenario for each flooding mechanism. This consequential flooding scenario represents ~~the-point~~ condition at which the flood severity exceeds the capability of protection features, including considerations for flood level, duration and/or associated effects, such that Key SSCs may be impacted.*

## NEI Comment 8

- Comment proposed modification of ISG, Enclosure 1, Section 5.2.
- Suggested text to add to NEI 16-05, Appendix D, Section D.2 for clarification:

*Licensees should 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 and addressed prior to use.*

## NEI Comment 9

- Comment proposed modification of ISG, Enclosure 1, Section 5.2.
- Suggested text to add to NEI 16-05, Appendix D, Section D.3 for clarification:

*To establish the frequency of exceeding a given measure of flood severity ~~for~~ when considering combined effect events associated with flood mechanisms being evaluated ~~Path 5~~ in the integrated assessment, 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).*



## **NEI Comments 10 and 11**

- Comments are editorial in nature.

## The Way Ahead

- JLD-ISG-2016-01 will be finalized next week.
- Availability will be announced by *Federal Register* notice.
- Any revisions to NEI 16-05 should be made in the near term in order to support this timeline.