NRR-PMDAPEm Resource

From: Uribe, Juan
Sent: Monday, August 18, 2014 2:06 PM
To: RILEY, Jim (jhr@nei.org)
Cc: Whaley, Sheena; Kuntz, Robert; Sebrosky, Joseph
Attachments: FAQ33 and 35-comments to Riley.8-18-2014.pdf

Follow Up Flag: Follow up
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Jim,

As discussed a couple of weeks ago, I have compiled comments from the NRC staff regarding FAQ 33 and 35 and have tried to summarize them as best as I understood them in preparation for the 8/21 public webinar.

Attached you will find the revised markup that you sent us for FAQ 33 and 35 with the NRC staff comments included. If you have any questions, please let me know.

Thanks
Juan Uribe

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FAQ 33: HRR – Options for Interim Actions for Challenging HRRs

A. TOPIC: HRR – Options for Interim Actions for Challenging HRRs

Source document: March 1, 2013 Eric Leeds 50.54(f) Supplemental Information Letter Section:

B. DESCRIPTION:

What options could be considered to develop interim actions as part of the Hazard Reevaluation Report submittal if the reevaluated hazard is particularly challenging?

Comment [A1]: Staff is still unclear on what the FAQ is trying to address and the message it intends to convey. Background with FAQ 31

March 1, 2013 Eric Leeds 50.54(f) Supplemental Information Letter states the following:

"Interim Actions (Requested Information Item 1.d)
Licensees whose Hazard Reevaluation results are not bounded by their current design basis were requested to describe in their 50.54(f) letter response interim actions, taken or planned, to address the reevaluated flooding hazard while the staff assesses the safety and regulatory significance of the reevaluated hazard. The staff's review of the proposed interim actions will leverage appropriate sections and concepts from existing guidance documents such as NEI 1207, "Guidelines for Performing Verification Walkdowns of Plant Flood Protection Features and JLD-ISG-2012-05, "Guidance for Performing the Integrated Assessment for External Flooding to evaluate the acceptability of the interim actions.

Licensees should describe the interim actions in sufficient detail to allow the NRC staff to assess their acceptability, in order to allow licensees the time needed to perform the integrated assessment and then implement permanent plant modifications, if necessary. The NRC staff will consider the appropriateness of the interim actions in the context of a licensee's ability to respond to the reevaluated flooding hazard(s) and how these actions continue to provide assurance of the licensee's ability to maintain the plant in a safe condition."

C. Initiator:

Name: Jim Riley Phone: 202-739-8137
Date: 1/8/14 E-Mail: jhr@nei.org

D. RESOLUTION: (Include additional pages if necessary. Total pages: 4)

Inquiry number: 33 Priority: H

The Basis for Interim Actions

The NRC's March 2012 50.54(f) cover letter states that the current regulatory approach and the resultant plant capabilities provide confidence that an accident with consequences similar to the Fukushima accident is unlikely to occur in the United States. The NRC letter concluded that continued plant operation and the continuation of licensing activities do not pose an imminent risk to public health and safety. Requested Information item 1.d of Enclosure 2 to the NRC letter states that the final report should contain "Interim evaluations and actions planned to address any higher flooding hazards relative to the design basis, prior to completion of the integrated assessment described below, if necessary."

Comment [A2]: Staff is not entirely clear of the relation and the value added between this portion of the paragraph (Fukushima-specific) and the second part of the paragraph stating the basis needed to submit interim actions, since they are independent of each other.

The flooding reevaluations being performed in response to the NRC's March 12, 2012 50.54(f) letter are for beyond design basis events. As such, they do not constitute an immediate operability concern and are not reportable outside of the response to the 50.54(f) letter unless the reevaluation results identify concerns with the current licensing or design basis. Note however, that the new condition may need to be entered into the corrective action program for evaluation.

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Concepts for Interim Actions

Based on the conservatisms in the deterministic approaches being used to reevaluate flooding hazards in accordance with present day methodology, these events could be very unlikely events. If the results of the reevaluated hazard exceed the current design basis, interim actions should be implemented as soon as reasonable. The time frame for development and deployment of interim actions should be informed by the relative risk(s) and frequency of occurrence (if known) of the updated flooding event evaluated for the Hazard Reevaluation Report (HRR). The time frame will also be impacted by the significance of the scope of the interim actions, and time needed to develop and implement them. Interim actions should focus on assuring the ability to maintain the key safety functions necessary to prevent core damage, spent fuel damage, and loss of containment ~~integrity~~ as a result of the new beyond design basis flood determined in the Hazard Re-evaluation Report (HRR). The NRC has described interim actions in the March 1, 2013 Eric Leeds 50.54(f) Supplemental Information Letter. Also, the NRC inspection procedure TI- 2515/190, used to inspect interim actions at the sites, provides additional insights on the appropriate actions to be put in place.

In some cases, the severity of the hazard defined by the HRR will be such that the event will be particularly challenging to the CDB ~~or in the most severe cases, it may not be possible to fully protect or mitigate the site from its effects by implementing interim actions.~~ As the licensee is considering its strategy, the following concepts might be useful. ~~Note that the bullets below describe a compilation of concepts developed by the industry. This FAQ was discussed with the NRC but their concurrence was not received.~~ NRC concerns identified during meetings on the subject are shown in brackets using *italicized* font. Licensees should keep the NRC concerns in mind as they consider these concepts in the determination of interim actions intended to mitigate their plant specific hazards.

[General NRC Concern: The NRC's main message during the discussion of this FAQ was that situations where the calculated flooding event is particularly challenging need to be handled on a case-by-case basis. Licensees should contact their NRC Project Manager prior to the HRR submittal to explain the conditions and explore options. In addition, since the 50.54(f) letter requests that the HRR should include interim evaluations and actions taken or planned in cases where the flooding CDB is exceeded, any licensee HRR submittals that show results greater than the flooding CDB and which do not identify interim evaluations or actions will receive particular scrutiny.]

- Implement all practical protection and mitigation strategies: Recognizing that the event may have a low frequency of occurrence, consider enhancing the existing mitigation strategies or flood protection features and implement new ones to the maximum extent practical. Any amount by which the current flood protection and mitigation features are enhanced makes the likelihood of exceeding their capabilities less.

- Refine the hazard considered: For the most part, the flooding hazard determination is a deterministic evaluation using the conservative combinations of parameters and events defined by the various governing regulatory guides, NUREGs, ISG documents, and standards. The resulting flooding hazard may be an unlikely event. Since the reevaluated flooding hazard is a beyond design basis event for existing plants, it is reasonable to further refine the analysis of the reevaluated hazard to a more credible event (as opposed to a bounding event that may result from a full application of the conservatisms in the governing guidance documents). Precedent evaluations should be reviewed and additional research may be warranted to justify the use of alternate methods.

  [*NRC commented that the likelihood of a given hazard is very plant specific. As a result, the event determined by the deterministic evaluation methods described in the various Reg Guides and other documents may not be unlikely in all cases.*]

Comment [A3]: The scenario in which this FAQ would be used is beyond the point of performing the FHRR review. Therefore, it should begin with the second sentence which is the main purpose. The staff is hesitant on the use of terminology such as "very unlikely events".

Comment [A4]: As soon as reasonable is an ambiguous term and open to interpretation. Interim actions, taken or planned, are to be submitted during the FHRR and will be reviewed by the staff. The timing for implementing the actions is very site specific and will be determined on a case by case basis. The rest of the paragraph touches on some of these aspects.

Comment [A5]: Why was "integrity" deleted?

Comment [A6]: The hazard is defined by the analysis parameters used and documented in the FHRR.

Comment [A7]: Remove NRC general concerns from the body of the document

Comment [A8]: Inconsistent with "very unlikely events" term. See comment J3.

Comment [A9]: Define

Comment [A10]: See comment A3. No value added.

Comment [A11]: This sentence needs additional clarification. HHA?

Comment [A12]: Remove NRC general concerns from the body of the document

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- Monitoring: Monitor the status of input parameters whose assumed values drive the reevaluated flood hazard and take a graded approach to actions as those parameters approach their assumed values. This monitoring should include communication and coordination with other federal agencies that possess information relevant to the hazard (e.g., USACE for dams, NWS for hurricanes and storm surge, etc.).

  For example, if conditions indicate that the probability of a challenge to a dam is increasing, communication should be established with the dam operator to determine the possibility of increased monitoring and inspection of the dam's condition. If a dam failure evaluation assumes a 100 year snow pack, monitor the actual snow pack at an appropriate frequency, increase the frequency if a defined threshold is reached, engage the operator of the dam to evaluate plans for water management if the snow pack continues to increase, and shutdown the plant if the 100 year snow pack is reached and the resulting flood cannot be fully protected or mitigated. In addition, inspections of yard drainage systems and clearing of any blockage could reduce the severity of flooding should it occur.

- Use of "FLEX"-type equipment: FLEX was designed as a means of mitigating beyond design basis events. To the extent that it is implemented at a site, FLEX equipment, or other equipment with similar functionality, could be considered to maintain key safety functions. If this strategy is used, ensure that FLEX equipment storage locations, connection points, and associated procedures appropriately consider the flood height and conditions determined by the reevaluation results so that equipment access and functionality are maintained.

  [NRC has commented that it is acceptable to use FLEX equipment to mitigate the hazard determined by the HRR.]

- Allowing flood waters to enter plant buildings: The key safety functions to maintain are core and spent fuel pool cooling and containment ~~integrity~~. In some extreme situations a strategy such as removing the vessel head, flooding up the vessel and refueling canal, and allowing flood waters to enter site buildings with the possible loss of SSC's that are not required to provide the necessary cooling function, may be necessary.

Note that interim actions do not have to be permanent modifications. The Integrated Assessment will determine the long term mitigation or protective actions that will be considered by the NRC during their 10CFR50.54(f) letter section 2.1 Phase 2 review to determine if any regulatory actions are needed to protect against the updated flooding related hazards (e.g., include in the site's licensing basis and mitigation strategy).

NOTE: FAQ-031 also contains guidance on interim actions.

Revision: ~~0~~1a Date: 7/~~10~~30/14

E. NRC Review:

Not Necessary ~~X~~ Necessary X

Explanation: ~~This FAQ was discussed with the NRC who expressed concern with some of the concepts as indicated above. NRC concurrence was not received. The FAQ is being issued as a compilation of concepts developed by the industry.~~

F. Industry Approval:

Documentation Method: Date:

Comment [A13]: It should be ensured that adequate communication procedures are in place and established in order to take credit for this action.

Comment [A14]: Remove NRC general concerns from the body of the document

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G. NRC Acceptance:

Interpretation_____ Agency Position_____

Documentation Method:_____N/A_____ Date:_____

FAQ 035: HRR Revisions

A. TOPIC: HRR Revision Process

Source document: Fukushima Response 50.54(f) letter Enclosure 2 Section: Required Response

B. DESCRIPTION:

REQUIRED RESPONSE item 2 states that licensees must submit Hazard Reevaluation Reports (HRRs) in accordance with the NRC's prioritization plan and within 1 to 3 years after the date of the information request letter. The description of the response is silent on when and how to submit updated information that changes the results previously submitted in the HRR. Under what circumstances and processes should updated information to the HRR be submitted?

C. Initiator:

Name: Jim Riley Phone: 202-739-8137
Date: 06/26/~~13~~14 E-Mail: jhr@nei.org

D. RESOLUTION: (Include additional pages if necessary. Total pages: 2)

Inquiry number: 035 Priority: H

The NRC prefers that HRRs not be revised except in the case where the licensee finds an error in the initial submittal because a revised submittal would be a burden on NRC resources (since their review might have to be restarted) and would cause a delay in closure of the 50.54(f) response. However, licensees may have additional compelling reasons for revising their HRRs such as improved assumptions, or updated models or analysis. In any case, if a revised HRR submittal is planned, inform the NRC in advance and explain the reason for the change.

There are two aspects to the question of HRR revision: (1) under what circumstances is it worthwhile to revise and resubmit the HRR, and (2) when should the revision be submitted to minimize disruptions in the review process.

Circumstances

HRR revisions are expensive for the licensee and challenging to the overall 50.54(f) response schedule and to NRC review resources. Revisions would normally not be undertaken unless the changes are significant. However, significance is not measured only by changes in flood level, for example:

- If an error is discovered in the evaluation, the NRC should be informed and a revision would normally be submitted. However, if the error is not substantive (i.e., it will not affect SSCs that are important to safety or flood protection or change plant response) a revised submittal may not be necessary.
- Small relative changes in flood level can have a large effect on the plant if the change in water level either avoids or causes overtopping of a flood barrier.
- Revisions to hazard evaluations that substantially impact warning time could either prevent or allow completion of manual actions that would otherwise not be possible, or allow use of passive protection in place of more costly measures such as automatic protection or mitigation.

Ultimately, a revised HRR submittal should not be undertaken unless the original HRR was in error or the improvement in results allows a reduction in plant response such that the benefits outweigh the cost of revision. ~~The NRC has not yet agreed to a process for revising the HRRs, except in the case where the licensee finds an error in the initial submittal, because a revised submittal would be a burden on NRC resources (since their review might have to be restarted) and would cause a delay in closure of the 50.54(f) response. From a utility's perspective, a revision would be costly and the improvement in results would have to be worth the cost of the~~

Comment [J1]: Needs further clarification and discussion. Staff's concern is an undefined iterative process. An error in the original submittal is a different scenario.

Comment [J2]: Other fundamental aspects may also have to be considered during an FHRR revision, for example: extent, magnitude and consequence(s) of the revision. For example, revising a FHRR with ssPMP values that represent "loading" values for basin models may have serious impacts to timelines and completion schedules.

Comment [J3]: It should still be communicated to the NRC review staff for awareness and alignment even if it doesn't lead to a "substantial change". A "substantial change" is also open to interpretation. Depending on the change, the staff would still expect a revised submittal to ensure the public record is accurate and adequately represents the review performed.

Comment [J4]: Reduction?

~~revision. However, there may be compelling reasons for some licensees to submit changes to their HRRs to address significant corrections, updated assumptions, or updated models/analysis.~~

Timing

~~The NEI Fukushima Flooding Task Force has developed the following possibilities for submitting new information that significantly impacts the HRR.~~HRR revisions can be submitted at any time, but the following options describe opportunities during the review process. ~~Note that if the new hazard analysis information is submitted sufficiently prior to issuance of the NRC's HRR Staff Assessment letter, the new information should be recognized.~~

1. As part of the initial HRR submittal, commit to revising the HRR as part of the response to Requested Information item 1.d in Enclosure 2 of the 50.54(f) letter ("interim evaluation and actions taken or planned"). ~~Submit an addendum or revision to the HRR – (The NRC has concerns about this option for the reasons stated above, but the 50.54(f) process would not rule out this action).~~
2. Submit a revised hazard analysis in response to a RAI on the HRR submittal. Recognizing the time limit for responding to most RAIs, if the updated analysis has not already been completed the response could commit to completing an updated analysis by a specified date.
3. Submit the new hazard analysis information as the basis for an update to the interim actions. The NRC has required sites to notify them if there are any changes to the interim actions listed in the HRR. ~~The new hazard analysis information could be submitted as an update to the interim actions.~~ The new information could impact margin (positively or negatively) and would provide a basis for revisions to the flooding response strategy.
4. Include the new hazard analysis information as part of the Integrated Assessment (IA) and address both the original and revised hazards in parallel showing the consequences of, and response to, both the HRR flooding level and the updated HMR flooding level.
5. Include the new hazard analysis information as an addendum or revision to the initial IA ~~along with~~submittal. This should include a description of the ~~impacts~~ changes to the IA conclusions caused by the updated hazard analysis.

Any of these approaches would put the new information on the docket and, depending on the timing of the submittal, either enable the NRC to recognize its effects on margin as they make their decision on hazard inputs to be used in the Integrated Assessment, or influence any regulatory action taken during Phase 2 of the 50.54(f) response process.

Revision: ~~0b~~0d Date: ~~07/10~~08/01/14

Comment [J5]: If the intent is to revise from the beginning, why doesn't the licensee request an extension as discussed in the March 1, 2013 letter?

Comment [J6]: It would be helpful to have advanced notification of the reason to revise the FHRR and a clear understanding of the extent of the planned revision.

E. NRC Review:

Not Necessary_____ Necessary____?_____

Explanation:_____

F. Industry Approval:

Documentation Method:_____ Date:_____

G. NRC Acceptance:

Interpretation_____ Agency Position_____

Documentation Method:_____ Date:_____