NRR-PMDAPEm Resource

From: DiFrancesco, Nicholas
Sent: Thursday, July 16, 2015 11:47 AM
To: 'Wetzel, Beth A'; Thompson, Russell R (rrthompson@tva.gov)
Cc: Shams, Mohamed; Jackson, Diane; Marshall, Michael; Wyman, Stephen; Vega, Frankie; Kock, Andrea; Saba, Farideh
Subject: Browns Ferry Units - Feedback Regarding Seismic Risk Evaluation Reassessment (MF3764 through MF3766)

Ms. Wetzel and Mr. Thompson,

In follow-up to the July 14, 2015, public meeting to evaluate additional insights related to screening and prioritization for the Browns Ferry Nuclear Plant, Units 1, 2, and 3 (BFNP), seismic risk evaluation. The staff discussed a number of information needs related to your work to demonstrate an increased seismic capacity of the BFNP Units and information to support consideration of providing relief from completing a seismic risk evaluation.

The following items are suggested for inclusion in your summary response.

- The first consideration for SPRA reassessment is the reevaluated hazard. The staff currently considers the BFNP Ground Motion Response Spectra (GMRS) hazard exceedance to be high. The BFNP ration of GMRS to SSE is 2.1 and the exceedance range is 70% over the 1 - 10 Hz range (BFNP GMRS exceeds approximately 3 – 10 Hz). The reconsideration of the screening decisions is intended to be used for those plants with small to moderate GMRS exceedences. For site reconsidered, please discuss why the GMRS hazard exceedance is not significant.

- As noted in the July 14 meeting, in the staff's original review of the BFNP's March 2014 assessment of the IPEEE SPID screening criteria, the staff identified several weaknesses in the IPEEE program to meet the Prerequisites (P) or Adequacy Demonstration (AD) Elements per Section 3.3.1 of the SPID. As reported in the May 9, 2014, the staff found that the Brown Ferry units did not meet the IPEEE screening criteria in the SPID. Provide additional information regarding the following items:

    1. The IPEEE guidance called for the use of different success paths to address transients and loss-of-coolant accident scenarios. Confirm that the original BFNP IPEEE only relied upon a single success path to mitigate both transient and loss-of-coolant accident scenarios (P)
    2. Discuss how transients and loss-of-coolant accidents are mitigated based on the proposed revised (i.e., inclusion of RCIC as the high-pressure response) analysis, including any necessary support systems and human actions that were not part of the original BFNP IPEEE success path (P)
    3. Discuss consideration of random failures in the original and revised analyses (P-2, P-3, and P-4)
    4. Discuss seismic interaction considerations
    5. Discuss reliance on human actions for event response and inclusion of the potential for failures of these human actions, including consideration and adjustment of performance shaping factors, in the original and revised analyses (P-2, P-3, and P-4)
    6. Confirm the scope of the soil failure review to augment the original focused scope of the IPEEE (AD-1)
    7. Discuss methods of evaluation or assumptions used in the revised analysis that are different than those used in the original BFNP IPEEE (AD-2)

- In the July 14 meeting, BFNP provided the RCIC HCLPF values as support to demonstrate the seismic capacity of a high pressure system, which was lacking in the IPEEE program. However, the HCLPF values by themselves are not sufficient information. Discuss your assessment and additional evaluations to address the differences between the ESEP and IPEEE for the RCIC equipment.

1. The scope differences. ESEP looked at certain pieces of equipment, describe your assessment of RCIC as a system. For example, but not limited to, SSCs not included in the ESEP scope; seismic interactions; non-seismic failures and human actions.
2. Describe your assessment of ESEP and IPEEE requirement differences with consideration of the IPEEE adequacy standards defined in the SPID. (P-3, AD-3 and AD-4)
3. Discuss steps taken to enhance the ESEP to meet IPEEE adequacy standards. (P-3, AD-3 and AD-4)
4. The mission time and shutdown state differences. For the IPEEE mission time is 72 hrs. with a particular shutdown state, the ESEP is basically Phase 1 duration, much shorter.

- As discussed in the July 14 meeting, maintaining the NRC review process is necessary for regulatory predictability. In implementing the review process for Recommendation 2.1: Seismic, the staff has sought to apply decisions consistently across the fleet.

  1. Please provide any additional information on plant improvements in the context of our existing processes outlined in the SPID for determining the adequacy on IPEEE for seismic screening purposes and/or the considerations for providing PRA relief. This may include, but not limited to, normal license amendment processes and Recommendation 2.1: seismic processes. Please specify the level of NRC review the additional information has received in lieu of performing a new technical review of the information supporting the BFN request.

- As part of the staff reassessment of seismic risk evaluation, risk insights and plant design are also being considered. Recommendation 2.1 process is intended to assure overall plant capacity at the higher BFN seismic hazard. The scope of a SPRA includes consideration both containment and plant system capacity.

  1. Please discuss the BFNP conditional containment failure probability (CCFP) and large early release frequency (LERF), including updates to bypass, venting, and any other early release scenarios. Please discuss the original IPE baseline values, if any, and any updated values since that time and provide the basis for the change in the estimated values.
  2. Provide the risk estimates for each frequency band (1hz, 5 hz, 10 hz, and PGA) using the 0.26 IPEEE plant capacity and the March 2014 GMRS hazard information.

A summary response is appreciated by July 31, 2015, to support NRC consideration of the information as part of its reassessment of seismic risk evaluation for Group 2 and Group 3 plants. The staff notes that discussion of SPRA reassessment was introduced during a May 21, 2015, public meeting, and licensees were encouraged to provide supplemental information to inform the staff deliberation process.

This email will be added to public ADAMS and will be referenced in the meeting summary.

Please feel free to contact Michael Marshall (x 2871) or I with questions, concerns, or if a clarification call is needed.

Sincerely,

Nick

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