

## **NRR-DRMAPEm Resource**

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# NRC Staff Observations of NEI Appendix X Process

**Public Meeting**  
July 19, 2019

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## Industry Appendix X: IA Process Strengths

- Collaborative effort between NRC and Industry to increase efficiency in risk-informed licensing applications
- Broad adoption resulting in great reduction of NRC staff resource needs
  - Fewer F&Os meant completion of 10 CFR 50.69 LARs on schedule
  - Anticipate similar efficiencies gained in other risk-informed LARs
- Direct access to model of record and cognizant licensee personnel allows for targeted, detailed review and resolution of F&Os as opposed to licensing process

## Industry Appendix X: Observations

### Closure of F&Os from concurrent focused scope peer review

- Appendix X provides for focused scope peer reviews to be conducted during the same on-site visit as an F&O closure review
- Appendix X does not discuss closing new F&Os generated during a focused-scope review by the same independent assessment (IA) team and during the same review
- Appendix X requires host utility to provide documentation to the IA at least two weeks prior to the on-site review – so an additional on-site review can be consistent with guidance
- A better understanding about how closure of F&Os from a concurrent focused scope peer review is conducted and documented is needed

## Industry Appendix X: Observations

### Closure of F&Os from concurrent focused scope peer review

- Staff expectations that F&O closure team has ample opportunity to review licensee's proposed resolution, licensee's documentation, and licensee's changes to the PRA are challenged by concurrent reviews.
- Staff expectations that licensee's work to fix F&Os after on-site review exit and before completion of F&O closure report is verified by F&Os closure team is challenged by concurrent reviews.
- Challenges may be addressed by better understanding and/or guidance

## Industry Appendix X: Observations

### Closing out F&Os from older Peer Reviews

- Older Peer Review F&Os are being closed out by comparison to superseded standards or check list (NEI 00-02, RG 1.200 revision 1, CEOG Checklist, etc.)
- RG 1.200 revision 2, provides guidance on self assessment converting NEI 00-02 reviews to ASME/ANS RA-Sb-2005
- Appendix X was written to provide confidence that all RG 1.200 revision 2 endorsed SRs are met at Capability Category II, i.e., ASME/ANS RA-Sb-2009 SRs
- If not closed as meeting CC II in ASME/ANS RA-Sb-2009 as endorsed by RG 1.200 revision 2, the LAR would have challenges demonstrating the PRA meets RG 1.200 revision 2.

## Industry Appendix X: Observations

### Closing out F&Os from older Peer Reviews

#### NRC Staff Position from Regulatory Guide 1.200:

It is NRC's expectation that, if the results of the self-assessment are used to demonstrate the technical adequacy of a PRA for an application, differences between the current version of the Standard (as endorsed in Appendix A of Revision 2 of this Regulatory Guide), and the earlier version of the ASME PRA Standard (i.e., ASME RA-Sb-2005) be identified and addressed.

For LARs, licensee must address gaps to ASME/ANS 2009 PRA Standard, as clarified by RG 1.200, Revision 2. This also applies to the closure of F&Os using the NEI Appendix X process.



## Not Addressed in NEI 00-02

**Table B-4. NRC Regulatory Position on Industry Self-Assessment Actions**

NEI Assessment				Regulatory Position
ASME Std SR	Addressed by NEI 00-02?	Applicable NEI 00-02 Elements	Industry Self-Assessment Actions	
<u>Note:</u> Index number referenced in “ASME Std SR” column references the index numbers in the ASME PRA Standard RA-Sb-2005. The index numbers have changed in the ASME/ANS PRA Standard RA-Sa-2009.				
IE-A6	No	---	Confirm requirement met. Specifying plant operations (etc.) review and participation is not explicitly addressed in NEI 00-02, but in practice, the peer reviews have addressed the need for examination of plant experience (e.g., LERs), and input from knowledgeable plant personnel. Interviews conducted at similar plants are not acceptable.	No objection

- Some Supporting Requirements are not captured in NEI 00-02
- Does not explicitly call for documenting how the SR was met

## Addressed in NEI 00-02

NEI Assessment		
ASME Std SR	Addressed by NEI 00-02?	Applicable NEI 00-02 Elements
AS-B5	Yes	DE-4, DE-5, <b>DE-6</b> , <b>AS-10</b> , <b>AS-11</b> , <b>QU-25</b>

- Many 2005 Supporting Requirements are captured in NEI 00-02, but have multiple NEI 00-02 technical elements attached to one SR
- Licensee may not always address all aspects of each SR

## Partially Addressed in NEI 00-02

NEI Assessment		
ASME Std SR	Addressed by NEI 00-02?	Applicable NEI 00-02 Elements
IE-A4	Partial	IE-5, IE-7, IE-9, IE-10

- Some 2005 Supporting Requirements are partially captured in NEI 00-02, and have NEI 00-02 technical elements attached to one SR
- Licensee may not explicitly address all aspects of each SR

## Examples from Table B-4 in Appendix B to Revision 2 of RG 1.200

- SR AS-A8 - NEI 00-02 Technical Elements missing explicit requirement for steady-state condition for end states
- SR IE-A4a – NEI 00-02 technical elements doesn't explicitly consider initiating events caused by multiple failures due to common cause
- SR SC-B2 – NEI 00-02 missing supporting requirement on when expert judgment is acceptable for use
- SR SY-A14 – NEI 00-02 missing supporting requirement on screening criteria for excluding contributors to unreliability and unavailability from the model

## Parting Thoughts

- Improve LAR documentation
  - Clearly describe the scope and timeline of F&O closure review
  - Discuss last full scope peer review
  - Describe any focused-scope peer reviews
  - Describe all concurrent focused-scope peer reviews
  - Explain and justify review criteria for older (pre-ASME/ANS Standard peer review) F&Os
  - Licensee should still submit all open F&Os in LAR
- Incomplete F&Os closure information will delay the review of LARs
- NRC staff will continue to perform audits and observations to provide continued monitoring and oversight of the Appendix X process.
- Formal Endorsement of Appendix X in RG 1.200, Revision 3 is Ongoing