NRR-DMPSPEm Resource

From: Miller, Ed
Sent: Tuesday, January 23, 2018 8:30 AM
To: Miller, Ed
Subject: NEI Slides for Jan 24, 2018, Public Meeting on PRA Change Control Process
Attachments: NEI Slides for Jan 24 2018 Public Meeting.pdf; NEI Supporting Information for Jan 24 2018 Public Meeting.pdf

NEI slides and supporting information for the subject meeting are attached.

Hearing Identifier: NRR_DMPS
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Subject: NEI Slides for Jan 24, 2018, Public Meeting on PRA Change Control Process
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MESSAGE	89	1/23/2018 8:29:32 AM
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Supporting Regulatory Stability in PRA Methods used in TSTF-505 Implementation

NRC Public Meeting

January 24, 2018

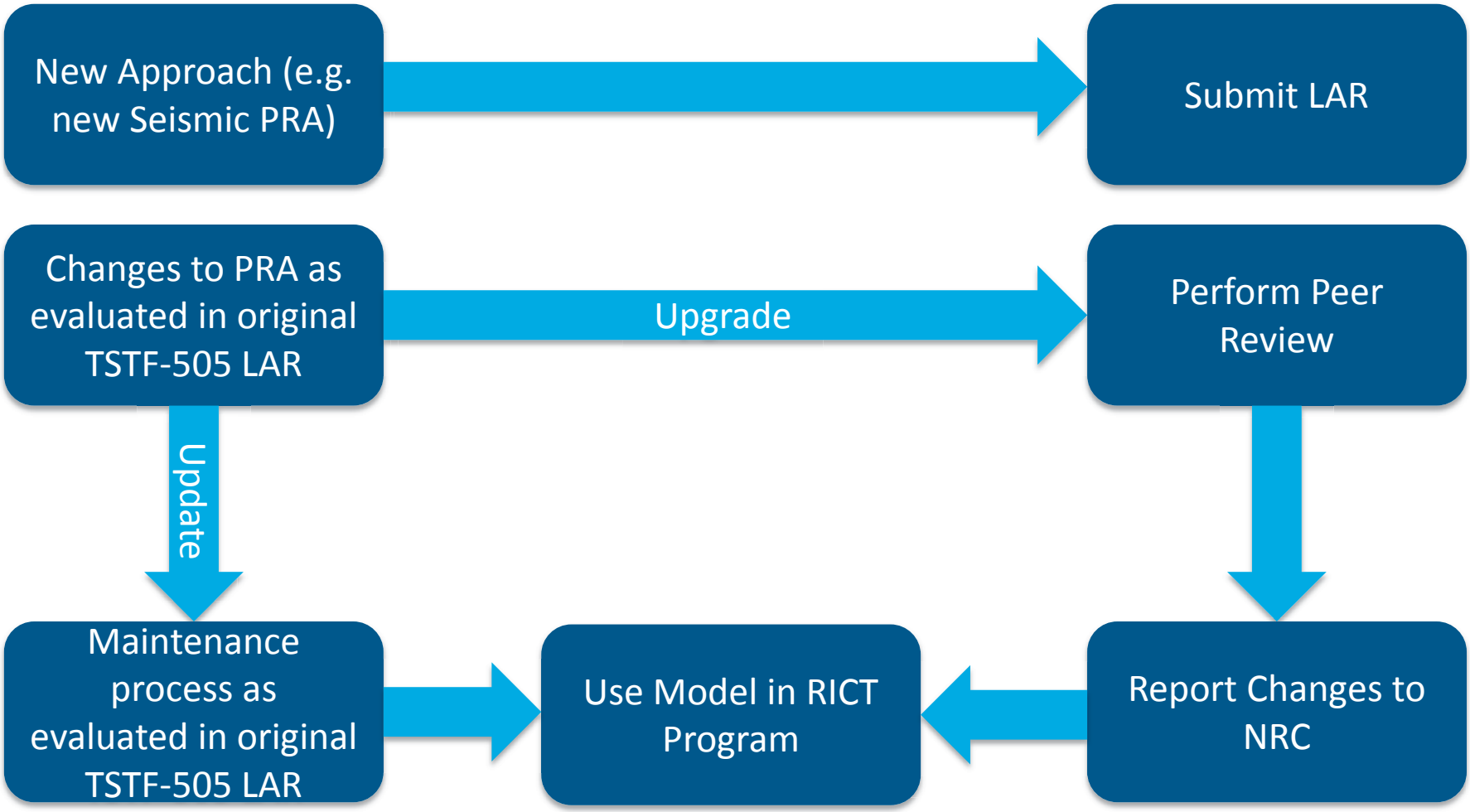
Objectives of Proposal

- Ensure licensees continue to operate in a safe manner while using the RICT program
- Achieve alignment with NEI 06-09 safety evaluation
- Allow NRC opportunity to evaluate changes to PRA, as they impact the RICT program
- Facilitate understanding and implementation for operations

Key Attributes of Proposal

- Changes to Fire and External Hazard PRA or non-PRA approaches require a LAR
  - Consistent with NEI 06-09 SE
- PRA maintenance and upgrade process
  - Evaluated by the PRA peer review process and complementary NRC review process
  - Validates that changes within a PRA model are evaluated in accordance with Appendix 1-A of the ASME/ANS PRA Standard
  - Any use of a new method constitutes an upgrade
  - New peer reviews conducted following upgrades
  - Next edition of ASME/ANS PRA Standard calls for peer reviews to review new methods, as needed
    - Industry peer review guidance updated to support this
    - Provided to NRC 12/1/17
- Licensees required to report to NRC all PRA upgrades following associated peer review, and prior to use in calculating RICTs

Overview of Proposal



Overview of TS Proposal

- Changes to PRA or non-PRA approaches
  - A RICT must be calculated using the following PRA and non-PRA methods approved by the NRC, including [list specific PRA and non-PRA methods used for fire and seismic analysis (e.g., Fire PRA and Seismic Margins Analysis)]. Changes to these PRA and non-PRA methods require prior NRC approval.

Overview of TS Proposal

- PRA Maintenance and Upgrade Process
  - The PRA maintenance and upgrade process will validate that other changes to the PRA models used in the RICT program follow the guidance in Appendix 1-A of ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications."

Overview of TS Proposal

- Reporting requirement for PRA upgrades
  - A report shall be submitted in accordance with Specification [5.6.X] following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a RICT. The report shall describe the scope of the upgrade.

Overview of TS Proposal

- TS Section 5.6, "Reports" Addition

  5.6.X Probabilistic Risk Assessment (PRA) Upgrade Report

  A report shall be submitted following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a Risk Informed Completion Time in accordance with Specification [5.5.18]. The report shall describe the scope of the upgrade.

Enabling Peer Review Guidance Changes

- NEI 17-07, PRA Peer Review Guidance
  - Combined previous peer review guidance documents
  - Added guidance on review of new methods to support new edition of ASME/ANS PRA Standard
- "New method" is one that is sufficiently different from methods currently in use such that it would be considered an upgrade
- Host utility responsible for initiating review of new method
  - Identify the need to include the review of a new method in the scope of the PRA peer review, when applicable
  - Ensure that the peer review team possesses the appropriate knowledge base and method documentation for performing this review.

Enabling Peer Review Guidance Changes

- Peer review of new method
  - Review new method to determine if there is sufficient documented technical basis to support the use of the method in PRAs for nuclear power plants
  - Ensure new method meets the endorsed ASME/ANS PRA Standard at the appropriate level for its intended use
  - Evaluate any previously conducted reviews, review of previous applications of the method in other venues, and the credibility of the method in comparison to operating experience
  - Review how the method is used in the host utility PRA to fully understand its implementation and the implication/impacts of the use of the method on the PRA.
- Peer review team may determine that additional review, beyond the peer review, is needed

Enabling Peer Review Guidance Changes

- Additional enhancements
  - F&Os - Unreviewed Analysis Method definition
    - Should a new method either not be identified by the host utility to the review team in advance, or should the review team be unable to complete the review of the new method during the peer review, a UAM F&O should be assigned. When an F&O is written with this classification, the method would need to be reviewed by a separate body of experts.
  - Finding closure appendix
    - Should an independent assessment team note the incorporation of a new-to-the-industry method into a licensee's PRA, they will not review the new method itself, and will not close relevant findings associated with the new method unless the licensee has included review of this new method in the scope of a concurrent focused scope peer review, as described in the body of this document.

Enabling Peer Review Guidance Changes

- Peer review report should include a clear discussion of conclusions regarding any new methods reviewed by the peer review team
  - Description of the method reviewed
  - Technical justification provided
  - Basis for the peer review team's decision regarding the technical acceptability of the method

Next Steps

- Following NRC concurrence on approach, TSTF will send revised TSTF-505 letter incorporating the RICT Program and PRA Report TS additions
- Identify regulatory approach for near-term acceptance of NEI 17-07

Proposal to Address Treatment of PRA Methods for TSTF-505

Proposal in September 27, 2017 TSTF to NRC Letter:

e. A RICT must be calculated using the PRA and non-PRA methods approved by the NRC, including [list specific PRA and non-PRA methods (e.g., Fire PRA and Seismic Margins Analysis) used to assess risk]. Changes to these PRA and non-PRA methods require prior NRC approval. The PRA maintenance and upgrade process will validate that changes to the PRA models used in the RICT program follow the guidance in Appendix 1-A of ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," and will be documented for NRC inspection.

Change to Approaches

A RICT must be calculated using the following PRA and non-PRA methods approved by the NRC, including [list specific PRA and non-PRA methods used for fire and seismic analysis (e.g., Fire PRA and Seismic Margins Analysis)]. Changes to these PRA and non-PRA methods require prior NRC approval.

Reference to PRA Standard

The PRA maintenance and upgrade process will validate that other changes to the PRA models used in the RICT program follow the guidance in Appendix 1-A of ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications."

Notification of PRA Upgrade

Propose the following, which is consistent with other TS reporting requirements, such as the Post Accident Monitoring Report and the Steam Generator Tube Inspection Report.

f. A report shall be submitted in accordance with Specification [5.6.X] following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a RICT. The report shall describe the scope of the upgrade.

To ensure the reporting requirement is not overlooked, it is separated into a separate paragraph. It's not necessary or consistent with other TS reporting requirements to state that the report is sent to the NRC or that it's being sent "by letter."

To be consistent with similar TS requirements, a reporting requirement is added to TS Section 5.6, "Reports":

A report shall be submitted following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a Risk Informed Completion Time in accordance with Specification [5.5.18]. The report shall describe the scope of the upgrade.

5.5.18 Risk Informed Completion Time Program

This program provides controls to calculate a Risk Informed Completion Time (RICT) and must be implemented in accordance with NEI 06-09-A, Revision 0, "Risk-Managed Technical Specifications (RMTS) Guidelines." The program shall include the following:

a. The RICT may not exceed 30 days;

---------- REVIEWER'S NOTE ----------
The Risk Informed Completion Time is only applicable in MODES supported by the Licensees PRA. Licensee's applying the RICT Program to MODES other than Modes 1 and 2 must demonstrate that they have the capability to calculate a RICT in those MODES or that the risk indicated by their MODE 1 and 2 PRA model is bounding with respect to the lower MODE conditions.
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b. A RICT may only be utilized in MODE 1, 2 [, and 3, and MODE 4 while relying on steam generators for heat removal];

c. When a RICT is being used, any change to the plant configuration, as defined in NEI 06-09-A, Appendix A, must be considered for the effect on the RICT.

1. For planned changes, the revised RICT must be determined prior to implementation of the change in configuration.

2. For emergent conditions, the revised RICT must be determined within the time limits of the Required Action Completion Time (i.e., not the RICT) or 12 hours after the plant configuration change, whichever is less.

3. Revising the RICT is not required If the plant configuration change would lower plant risk and would result in a longer RICT.

d. If the extent of condition evaluation for inoperable structures, systems, or components (SSCs) is not complete prior to exceeding the Completion Time, the RICT shall account for the increased possibility of common cause failure (CCF) by either:

1. Numerically accounting for the increased possibility of CCF in the RICT calculation; or

2. Risk Management Actions (RMAs) not already credited in the RICT calculation shall be implemented that support redundant or diverse SSCs that perform the function(s) of the inoperable SSCs, and, if

practicable, reduce the frequency of initiating events that challenge the function(s) performed by the inoperable SSCs.

e. A RICT must be calculated using the following PRA and non-PRA methods approved by the NRC, including [list specific PRA and non-PRA methods used for fire and seismic analysis (e.g., Fire PRA and Seismic Margins Analysis)]. Changes to these PRA and non-PRA methods require prior NRC approval. The PRA maintenance and upgrade process will validate that other changes to the PRA models used in the RICT program follow the guidance in Appendix 1-A of ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications."

f. A report shall be submitted in accordance with Specification [5.6.X] following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a RICT. The report shall describe the scope of the upgrade.

[5.6.X Probabilistic Risk Assessment (PRA) Upgrade Report

A report shall be submitted following each PRA upgrade and associated peer review, and prior to using the upgraded PRA to calculate a Risk Informed Completion Time in accordance with Specification [5.5.18]. The report shall describe the scope of the upgrade.]