

From: Sebrosky, Joseph
Sent: Wednesday, February 17, 2021 8:51 AM
To: Chisholm, Brandon Michael; Afzali, Amir
Cc: Uribe, Juan; Oesterle, Eric; Jim C. Kinsey Jr; Segala, John; Reckley, William; Jung, Ian; Hayes, Michelle; Vechioli Feliciano, Lucieann; Stutzke, Martin; Schmidt, Jeffrey; Travis, Boyce
Subject: NRC observation team feedback on 2/3 XEnergy TICAP tabletop exercise
Attachments: NRC Observations of 2-3 XEnergy TICAP Tabletop.docx

Brandon and Amir,

The purpose of this email is to provide you with the attached NRC observation team feedback associated with the 2/3 XEnergy TICAP tabletop exercise. I would like to capture the attached feedback in ADAMS and make the document publicly available. To this end can you confirm that the document does not contain proprietary or sensitive information. If it does please let me know where this information can be found so that I can redact it.

Please let me know if you would like to discuss any of the attached observations with the team to better understand the underlying issue.

Sincerely,

Joe Sebrosky
240-500-0614 (cell)

Hearing Identifier: NRR_DRMA
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NRC Observations Associated with February 3, 2021, X-Energy
TICAP Tabletop Exercise

General Observations

- I. The staff notes that the first TICAP tabletop exercise was run differently than the LMP tabletop exercises. Namely the LMP tabletops were done after the NEI LMP guidance document was already written and therefore provided more insights on implementation of the LMP guidance. For TICAP, it appears that the vendors are implementing the tabletops earlier in the process and using the tabletops to help develop the TICAP guidance. The staff would just like to confirm this understanding is correct going forward. The staff understands that the focus of future tabletops will be to test-run TICAP against selected portions of the application. This is particularly relevant for Chapters 5, 6, and 7 which would help the staff see the difference between the information provided in the SAR for a safety-related SSC and a non-safety-related with special treatment SSC.
- II. The staff would like to confirm industry's understanding of the TICAP guidance related to incorporating by reference technical report/topical reports into the safety analysis report. The staff considers such documents that are incorporated by reference (IBR) into the SAR to be part of the SAR (i.e., part of the licensing basis) and therefore subject to the SAR change process. Although the TICAP guidance on content of application includes reference to NEI 98-03 for distinctions between IBR and documents referenced in the SAR, the discussions of the Chapter 2 content seemed to convey an inconsistently applied approach regarding whether IBR documents are considered part of the SAR. Additional discussions in this area may be needed, and clarifications to the TICAP guidance document may be appropriate.
- III. It may be beneficial for the NRC staff to have a content of application version continuously accessible throughout the entire period of the tabletop exercises such that more meaningful questions/feedback could be developed for the focus area for the tabletop exercise.

Areas of Requested Feedback

- I. What inconsistencies, if any, were noted between the sample SAR content discussed during the 2/3 tabletop and NRC expectations
 - a. The TICAP guidance document that was provided to support the tabletop has more content in it than the staff has previously seen. It provided the staff with a better understanding of how Southern is developing the document. The staff thought this was a step in the right direction.
 - b. The staff was expecting the tabletop to cover more topics. Only two chapters were discussed (chapter 2, Generic Analyses (20-page document – provided) and chapter 8 (plant programs – only 2 pages provided). Chapters 5, 6, and 7 were referenced during discussions but the staff did not have any proposed input to “observe”
 - i. Having information on chapters 5, “SSC Categorization,” Chapter 6, “Safety-related SSC capabilities,” and Chapter 7, “Non-safety related with special treatment capabilities,” would have been helpful to assess level of detail provided for these chapters

- ii. In areas where another document is referenced or referred to, some sample content (e.g. a table of contents) would be useful in confirming that the total level of detail available for review is adequate for the staff to make findings on the proposed information.
 - c. It was not clear to the staff the extent to which the TICAP guidance document was used to support the tabletop. Most of the exercise discussion was on Chapter 2 and it was not clear to the staff how the TICAP guidance document was used to develop the content for this chapter.
- II. Does the NRC/INL have any suggestions for additional contexts that may be helpful to see in the tabletop report
 - a. Tech specs and other plant programs were referenced in the discussions on Chapter 8. It is unclear what guidance is going to be provided in TICAP regarding these topics. Southern has previously indicated that Tech Specs are outside the scope of the guidance it is developing. Having a clear understanding of what is and is not within the scope of TICAP is needed. Having information in the SAR (perhaps in chapters 5, 6, and 7) regarding associated technical specifications could obviate the need for a technical specification basis document.
 - b. For those guidance documents and plant programs that are not part of TICAP, and for which no development plans are scheduled, it would be beneficial to gather insights on what the industry plans to reference/rely upon for completion of that portion of the SAR (i.e., How to meet 10CFR 50.36(a))
- III. What other clarifying questions, if any, does the NRC have based on NRC/INL team observations
 - a. It would be helpful to provide a definition of what an “Affirmative Safety Case” is and the extent to which it will be described in the guidance document.
 - b. If we agree that Chapter 1 does not contain any licensing basis info that needs to be maintained or is part of change control process scope, no information that would be utilized by the staff in developing its findings should be included in Chapter 1 that is not provided elsewhere in the SAR (e.g., deviations/exceptions to the NEI 18-04 methodology were mentioned in Chapter 1 and those would likely be part of the licensing basis).
 - c. References to Southern Co. documents and DOE documents for additional guidance make the document less user friendly – relevant portions from these documents and/or examples from the LMP tabletops should be included in the TICAP guidance document. See related comment above (i.e., I.b.ii)
 - d. The NRC staff notes that it is important to reach a common understanding about where PRA-related information will be located in the application. To this end, it would helpful to map each of the SRP Section 19.0 acceptance criteria to the various TICAP chapters. The NRC staff recognizes that some of these acceptance criteria do not apply to non-light water reactors, and that additional information will be provided that is specific to the use of PRA-related information

in supporting implementation of the LMP process. The following table provides, as an example, an initial attempt at how this mapping could be performed using the existing guidance from the SRP. The table is provided for illustrative purposes to assist in further refining the TICAP guidance document.

TICAP Chapter	PRA-Related Information
2 – Generic Analysis	SRP 19.0 Acceptance Criteria: 9 – PRA quality control 10- PRA technical adequacy 11 – Meet Capability Category I 12 – Prior NRC staff reviews, etc. 13 – Use of assumptions 18 – PRA maintenance process 19 – PRA maintenance and upgrade 20 – PRA maintenance and upgrade program 21 – Treatment of tornados 22 – Treatment of hurricane missiles
3 – Licensing Basis Events	Use of PRA-related information for LBE selection (specific to LMP)
4 – Integrated Evaluations	SRP 19.0 Acceptance Criteria: 1 – Use of PRA to identify vulnerabilities 2 – Demonstrate that the QHOs are met 3 – Demonstrate the the CPG is met 4 – Identify risk-informed safety insights 5 – TMI requirement to perform PRA (n/a) 6 – Use PRA results in an integrated fashion 7 – Importance analysis 8 – Uncertainty analysis 14 – PRA quantitative and qualitative results 15 – PRA includes internal floods and fires 16 – Reporting of significant risk contributors 17 – Definition of “significant” 23 – Containment structure integrity 24 - Containment structural integrity
5 – Safety Functions, Design Criteria, and SSC Classification	Use of PRA-related information for SSC classification (specific to LMP)