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U. S. Nuclear Regulatory Commission
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Donald C. Cook Nuclear Plant Unit 1 and Unit 2
Supplemental Response to Request for Additional Information Regarding the License Amendment
Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control-Risk
Informed Technical Specification Task Force (RITSTF) Initiative 5B

References:

1. Letter from J. P. Gebbie, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant Units 1 and 2 License Amendment Request to Adopt TSTF-425-A, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B'," dated November 19, 2015, Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A469.
2. Letter from Q. S. Lies, I&M, to NRC, "Donald C. Cook Nuclear Plant Units 1 and 2 Supplement to License Amendment Request to Adopt TSTF-425-A, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B'," dated February 4, 2016, ADAMS Accession No. ML16039A240.
3. Letter from A. W. Dietrich, NRC, to J. P. Gebbie, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Request for Additional Information Regarding License Amendment Request to Relocate Surveillance Frequencies to Licensee Control (CAC Nos. MF7114 and MF7115)," dated May 11, 2016, ADAMS Accession No. ML16127A079.
4. Letter from Q. S. Lies, I&M, to NRC, "Donald C. Cook Nuclear Plant Unit 1 and Unit 2 Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control-Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B," dated June 16, 2016, ADAMS Accession No. ML16173A256.

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5. Letter from A. W. Dietrich, NRC, to J. P. Gebbie, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Follow-Up Request for Additional Information Regarding License Amendment Request to Relocate Surveillance Frequencies to Licensee Control (CAC Nos. MF7114 and MF7115)", dated August 1, 2016, ADAMS Accession No. ML16211A015.
6. Letter from Q. S. Lies, I&M, to NRC, "Donald C. Cook Nuclear Plant Unit 1 and 2 – Follow-Up Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control-Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B," dated September 9, 2016, ADAMS Accession No. ML16258A145.
7. Public Meeting on October 27, 2016, Regarding License Amendment Request to Relocate Surveillance Frequencies to a Licensee-Controlled Program.

This letter provides Indiana Michigan Power Company's (I&M), licensee for Donald C. Cook Nuclear Plant (CNP) Units 1 and 2, response to the Request for Additional Information (RAI) by the U. S. Nuclear Regulatory Commission (NRC) regarding a license amendment request (LAR) to adopt Technical Specification Task Force (TSTF)-425-A, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B."

By Reference 1, as supplemented by Reference 2, I&M submitted a request to amend the Technical Specification to CNP Units 1 and 2 Renewed Facility Operating Licenses DPR-58 and DPR-74 to adopt TSTF-425, Revision 3. By Reference 3, the NRC transmitted an RAI regarding the LAR submitted by I&M in Reference 1. By Reference 4, I&M responded to the Reference 3 RAI. By Reference 5, the NRC transmitted a follow-up to the Reference 3 RAI. By Reference 6, I&M provided a follow-up response to Reference 3. By Reference 7, I&M committed to provide the NRC additional follow-up information to complete their review. Enclosure 1 to this letter provides an affirmation statement. Enclosure 2 to this letter provides I&M's response to the follow-up information committed to by Reference 7. Enclosure 3 provides the Focused Scope Peer Review-Pre-Initiator HRA.

Copies of this letter are being transmitted to the Michigan Public Service Commission and Michigan Department of Environmental Quality, in accordance with the requirements of 10 CFR 50.91.

There are no new regulatory commitments made in this letter. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager, at (269) 466-2649.

Sincerely,



Q. Shane Lies
Site Vice President

DB/ml

Enclosures:

1. Affirmation
2. Follow-Up Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control
3. Donald C. Cook Focused Scope Peer Review – Pre-Initiator Human Reliability Analysis

c: R. J. Ancona, MPSC
A. W. Dietrich, NRC, Washington, D.C.
MDEQ – RMD/RPS
NRC Resident Inspector
C. D. Pederson, NRC, Region III
A. J. Williamson, AEP Ft. Wayne, w/o Enclosures

Enclosure 1 to AEP-NRC-2016-81

AFFIRMATION

I, Q. Shane Lies, being duly sworn, state that I am the Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the U. S. Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.

Indiana Michigan Power Company

Q. Shane Lies

Q. Shane Lies
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 3 DAY OF November, 2016

Danielle Burgoyne
Notary Public

My Commission Expires 04-04-2018

DANIELLE BURGOYNE
Notary Public, State of Michigan
County of Berrien
My Commission Expires 04-04-2018
Acting in the County of Berrien

Enclosure 2 to AEP-NRC-2016-81

Follow-Up Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control

By letter dated November 19, 2015, (Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A469), as supplemented by letter dated February 4, 2016, (ADAMS Accession No. ML16039A240), Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP), Units 1 and 2, submitted a request to amend the Technical Specifications to CNP Units 1 and 2 Renewed Facility Operating Licenses DPR-58 and DPR-74 to adopt Technical Specification Task Force (TSTF)-425, Revision 3.

The U. S. Nuclear Regulatory Commission (NRC) staff is currently reviewing the submittal, as supplemented, and has determined that additional information is needed in order to complete the review. I&M previously provided a follow-up response (Reference 2) to NRC Request for Additional Information (RAI) RAI-PRA-1-01. The following is an updated response to RAI-PRA-1-01, which provides the results of the focused scope follow-on peer review of the pre-initiator Probabilistic Risk Assessment (PRA) upgrade, and dispositions of the Findings and Observations (F&Os) and Supporting Requirements (SRs) HR-A1 through HR-C3.

RAI-PRA-1-01

In response to RAI-PRA-1, Indiana Michigan Power Company (I&M, the licensee) stated that the dispositions to the Facts and Observations (F&Os) on the pre-initiator Human Reliability Analysis (HRA) from the license amendment request (LAR) have been "replaced by a new analysis," similar to a methodology used by other licensees. Based on this response, it would seem that the methodology for pre-initiator HRA is a new methodology and constitutes a PRA upgrade as stated in the American Society of Mechanical Engineers/American Nuclear Society (ASME/ANS) PRA standard, in that "new should be interpreted as new to the subject PRA even though the methodology in question has been applied in other PRAs" (Section 1-A.1 of ASME/ANS RA-Sa-2009). Specifically cited as "Example 24" in Section 1-A.3.24 of ASME/ANS RA-Sa-2009 is that employing a different HRA approach to human error analysis constitutes a PRA upgrade.

- a) If the "new analysis" fits the definition and criteria of ASME/ANS RA-Sa-2009 of a new methodology, and, therefore, a PRA upgrade, perform a focused scope peer review on the affected supporting requirements (i.e., at a minimum, those related to HRA in the applicable parts of ASME/ANS RA-Sa-2009), and provide the F&O's with a description of the impact to the TSTF-425 program.*
- b) If the "new analysis" does not fit the definition and criteria of a new methodology, explain why it does not fit the definition of a PRA upgrade as defined in the ASME/ANS standard.*

I&M Revised Response to RAI-PRA-1-01:

In developing the response to this request, CNP PRA staff performed a review of the previously used method for the development of pre-initiator Human Failure Events (HFEs) and the method

used in the development of the current pre-initiator HFEs as described in the response to RAI-PRA-1-01 in Reference 2. This review was necessary to understand if a new methodology had been utilized and if so, what specific SRs of the Standard were impacted and thus provide the focus for the limited scope peer review if needed.

Based on this review and the application of the definition of a PRA upgrade per Section 1-2 of Reference 4 and guidance from Section 1-A.2 of Reference 5, I&M determined that a PRA Upgrade relative to the CNP Full Power Internal Events PRA model had occurred. This upgrade was specifically related to the identification, screening, and definition of pre-initiator HFEs. The methods used to quantify and document pre-initiator HFEs were not upgraded, though the new events identified by the new work were quantified for use in the model and added to the documentation.

Though this new method did result in a more comprehensive set of pre-initiator HFEs to incorporate into the PRA model, it was determined that the scope of the peer review should be limited to only the SRs that were impacted by the newly identified method used to identify, screen, and define pre-initiator HFEs. A Focused Scope Follow-On Peer Review of the SRs associated with the identification, screening, and definition of pre-initiator HFEs was performed and the selected SRs (HR-A1 through HR-C3) bounded the SRs identified in the response to RAI-PRA-1-01 as described in Reference 5. This conclusion was supported by following guidance in Section 1-5.4 of Reference 6 that a PRA Upgrade "...shall receive a peer review in accordance with the requirements specified in the Peer Review Section of each respective Part of this Standard, but limited to aspects of the PRA that have been upgraded." Following that same guidance, SRs in HR-D and HR-I were not subject to the peer review since the quantification and documentation methods were not upgraded.

This Focused-Scope Peer Review has been completed and was performed following the guidance in Section 1-6 of Reference 4 and in NEI 05-04, Revision 2, "Process for Performing Internal Events PRA Peer Reviews Using the ASME/ANS PRA Standard" (Reference 5). A copy of the Focused Scope Follow-On Peer Review report is included as Enclosure 3 to this letter and provides further detail on the information that is summarized below. It is noted that as part of the Focused Scope review, the peer reviewer was asked to review the F&Os from the original 2015 Peer Review that were related to SRs HR-A1 through HR-C3 to determine if those items had been appropriately addressed, in addition to re-reviewing the SRs that were germane to the upgrade.

The Focused-Scope Peer Review determined that SRs HR-A1 through HR-C3 were all met at Capability Category (CC) II or higher. In addition, the three F&Os related to SRs HR-A1 through HR-C3 that were received from the 2015 full scope peer review have been addressed and are now considered closed. Several new F&Os were received upon completion of the Focused Scope Follow-On Peer Review.

Those results are provided in Appendices A-D of Enclosure 3 to this letter. Three tables are provided below to highlight the scope of the Focused-Scope Peer Review as described above and to summarize the F&Os that were received along with descriptions of any impact on the Surveillance Frequency Control Program (SFCP).

The results of the pre-initiator HRA analysis have not yet been incorporated into the Fire PRA. The previous commitment (Reference 3) to re-integrate the Fire PRA with the Internal Events PRA prior to program implementation remains unchanged and will incorporate the pre-initiator HRA analysis, and all other model changes previously committed to; prior to SFCP implementation.

Table RAI-PRA-1-01-1 below shows a breakdown of the High Level Requirements (HLR) from the PRA Standard in Reference 4, and is provided as a summary of the scope of the Focused Scope Follow-On Peer Review that was performed.

Table RAI-PRA-1-01-2 shows a summary of the SRs that were reviewed as part of the Focused Scope Follow-On Peer Review along with dispositions and descriptions of their impacts to the SFCP.

Table RAI-PRA-1-01-3 shows a summary of the findings received as part of the Focused Scope Follow-On Peer Review along with dispositions and descriptions of their impacts to the SFCP.

References

1. Letter from A. W. Dietrich, NRC, to J. P. Gebbie, I&M, "Donald C. Cook Nuclear Plant, Units 1 and 2 – Follow-Up Request for Additional Information Regarding License Amendment Request to Relocate Surveillance Frequencies to Licensee Control (CAC Nos. MF7114 and MF7115)", dated August 1, 2016, ADAMS Accession No. ML16211A015.
2. Letter from Q. S. Lies, I&M, to NRC, "Donald C. Cook Nuclear Plant Unit 1 and 2 – Follow-Up Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control-Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B," dated September 9, 2016, ADAMS Accession No. ML16258A145.
3. Letter from J. P. Gebbie, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant Units 1 and 2 License Amendment Request to Adopt TSTF-425-A, Revision 3, 'Relocate Surveillance Frequencies to Licensee Control – Risk Informed Technical Specification Task Force (RITSTF) Initiative 5B'," dated November 19, 2015, Agencywide Documents Access and Management System (ADAMS) Accession No. ML15328A469.
4. ASME/ANS RA-Sa-2009, "Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications," February 2009.
5. NEI 05-04, "Process for Performing PRA Peer Reviews Using the ASME PRA Standard (Internal Events), Revision 2, November 2008
6. Jensen Hughes, Inc. "D. C. Cook Focused Scope Peer Review – Pre-Initiator HRA," Report No. 1BT11V001-RPT-01, October 10, 2016

Table RAI-PRA-1-01-1 – HLRs Overview for the Focused Scope Follow-On Peer Review

HLR from RA-Sa-2009	Description of HLR	Disposition	Status or Result of Focused Scope Follow-On Peer Review
HLR-HR-A	Identification of Pre-Initiators	Upgraded – Required Review	All SRs Met at CC-II
HLR-HR-B	Screening of Pre-Initiators	Upgraded – Required Review	All SRs Met at CC-II
HLR-HR-C	Definition of Human Failure Events to Characterize the impact of Pre-Initiators	Upgraded – Required Review	All SRs Met at CC-II
HLR-HR-D	Assessment and Quantification of Pre-Initiators	Not Upgraded (1)	N/A
HLR-HR-I	Documentation	Not Upgraded (2)	N/A

- (1) Pre-initiator quantification methodologies (THERP and ASEP) were not changed and therefore no upgrade was made that affects this HLR. New Pre-Initiator HFEs that were created as a result of upgrading identification and screening were quantified consistent with existing Pre-Initiator HFEs.
- (2) No changes were made to the documentation approach as a result of changing identification and screening. Updates to the documentation as a result of changes to identification and screening were not considered as “upgrades” or changes in the methodology used to document the Pre-Initiator HFEs.

Table RAI-PRA-1-01-2 – Focused Scope Follow-On Peer Review SR Review and Dispositions

NOTE – The Peer Review Assessment Basis, Applicable F&Os, and Capability Category grade are extracted from the focused scope peer review report. Sections and appendices referenced in the basis are generally from the pre-initiator HRA notebook. Refer to the peer review report (Enclosure 3 to this letter) for specific references.

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
HR-A1	HR-A1-01	Met	<p>The review of systems and operating experience through the processes discussed in Sections 2.1 Systems Review and 2.2 Operating Experience Review, respectively, have provided important input to the identification of relevant components and how they should be modeled (individual, train, system level) to best reflect the equipment impacts of any misalignments. This has been implemented through the Identification Steps for Restoration Errors listed on pgs. 13 – 14 and documented in Appendix A of [the Pre-Initiator HRA Notebook].</p> <p>This SR is considered to be MET with one applicable F&O (Suggestion).</p>	<p>This SR is considered met with one suggestion-level F&O. There is no impact to the SFCP from suggestion-level F&Os.</p>
HR-A2	HR-A1-01	Met	<p>The review of systems and operating experience through the processes discussed in Sections 2.1 Systems Review and 2.2 Operating Experience Review, respectively, have provided important input to the identification of relevant components and how they should be modeled (individual, train, system level) to best reflect the equipment impacts of any misalignments. This has been implemented through the Identification Steps for Restoration Errors listed on pgs. 13 – 14 and documented in Appendix A of</p>	<p>This SR is considered met with one suggestion-level F&O. There is no impact to the SFCP from suggestion-level F&Os.</p>

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
			<p>[the Pre-Initiator HRA Notebook].</p> <p>This SR is considered to be MET with one applicable F&O (Suggestion).</p>	
HR-A3	HR-A3-01	Met	<p>Appendix C provides interpretation of SR HR-A3 intent and the rationale for the legitimacy of the analysis in meeting this SR. A suggestion is provided in F&O HR-A3-01 for how this argument could be further strengthened. The review of systems and operating experience through the processes discussed in Sections 2.1 Systems Review and 2.2 Operating Experience Review, respectively, have provided important input to the identification of relevant components and how they should be modeled (individual, train, system level) to best reflect the equipment impacts of any misalignments or miscalibrations.</p> <p>This SR is considered to be MET with one applicable F&O (Suggestion).</p>	This SR is considered met with one suggestion-level F&O. There is no impact to the SFCP from suggestion-level F&Os.
HR-B1	HR-B1-01	Met at CC II-III	<p>Screening is performed along with the pre-initiator HFE identification process followed as discussed in Sections 2.1 and 2.2 with the systems review and operating experience review, consistent with the examples provided in the PRA Standard Cat. II/III. Additional screening for detailed analysis is done on the basis of risk significance by assigning a screening value of 1E-02 for independent events, per NUREG-1792, and applying those values in the quantification to evaluate Risk Reduction Worth (RRW) and Risk Achievement Worth (RAW) values of the HFEs. For subsequent</p>	This SR is considered met at CC II-III with one suggestion-level F&O. There is no impact to the SFCP from suggestion-level F&Os.

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
			<p>dependent events, however, the HEP recommended by the NUREG has been altered. Section 3.1 states that "...the conditional HEP value for the subsequent event is reduced from 5.0E-01 to 1.0E-01. This is still considered to be conservative, but more appropriate based on the results of the plant operating experience review documented in Appendix A.2."</p> <p>However, the basis/rationale for the reduction of the conditional HEP value is not well explained in either Section 3.1 or Appendix A.2. A better rationale was found in Table 4-6 on Assumptions and states: "Given that 1) industry plant data does not support common mode failure events in the range that would be implied by the NUREG-1792 screening values, 2) use of lower scoping values does not preclude the identification of important Type A contributors, and 3) current plant procedures and practices virtually ensure that at least one viable type of recovery is available for critical actions, the CNP pre-initiator HRA process reduces the NUREG-1792 conditional failure probability from 0.5 to 0.1."</p> <p>It is recommended that this latter discussion be moved to either Section 3.1 or Appendix A.2, or both to provide better clarification on the rationale for the conditional HEP value reduction from the level cited in NUREG-1792.</p> <p>This SR is considered to be MET with one applicable F&O (Suggestion).</p>	

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
HR-B2	HR-B2-01	Met	<p>The processes for identifying HFEs in Sections 2.1 and 2.2 state that systems and operating experience reviews were conducted and that "P&IDs, procedures, system descriptions and/or operating instructions [were used] to assist in the pre-initiator HEP identification process".</p> <p>The system analysis and operating experience reviews were very thorough and are documented in tables in Appendix A. They demonstrate that many pre-initiator HFEs were identified through system reviews alone.</p> <p>For example, Section 2.1 on Systems Review discusses Restoration Error identification steps. Step 4.a. on Restoration Error Potential-No Auto-Realignment states that "Failures to restore auto realignment capability to components should be considered as a failure mode when there is a definable common mode failure mechanism that could impact multiple trains of a redundant system or diverse systems."</p> <p>But there are instances in the Appendix A tables where it is not clear that procedures were also checked to ensure that the components cited should have been screened from inclusion in the pre-initiator HRA.</p> <p>This SR is considered to be MET with one (1) applicable F&O (Finding).</p>	<p>This SR is considered met.</p> <p>The full details of the disposition of F&O HR-B2-01 are provided in Table RAI-PRA-1-01-3.</p> <p>Since no technical changes to the internal events model are required to resolve this F&O, this F&O has no impact on the SFCP.</p>

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
HR-C1	None	Met	<p>The identification process discussed in Section 2.0 identifies candidate pre-initiator HFEs based on system and operating experience review and defines the level to which they apply, such as described in Cases A and B in Section 2.1 for restoration errors. Table 2-1 provides a list of the Unit 1 and Unit 2 pre-initiator actions identified for CNP through these systems and operating experience reviews.</p> <p>This SR is considered to be MET and there are no applicable F&Os.</p>	The SR is considered to be Met. There is no impact on the SFCP.
HR-C2	None	Met at CC II-III	<p>The system review process outlined in Section 2.1 as IDENTIFICATION STEPS FOR RESTORATION ERRORS and documented in Appendix A addressed the identification of the modes of unavailability from restoration errors cited in the standard SR.</p> <p>Appendix A.2 specifically documents the collection of plant-specific operating experience and the review for relevance to the pre-initiator HRA is documented in Table A-22: CNP Operating Experience Review. No ARs were found that resulted in any additions to the pre-initiator HFEs in the PRA, but in one case pre-initiator HFEs that had been defined by the systems review were confirmed.</p> <p>This SR is considered to be MET and there are no applicable F&Os.</p>	The SR is considered to be Met at CC II-III. There is no impact on the SFCP.

Supporting Requirement	Applicable F&Os	Focused Scope Peer Review Capability Category	Focused Scope Peer Review Assessment Basis	Disposition and/or Description of Impacts to the SFCP
HR-C3	None	Met	<p>Miscalibration as a mode of failure of initiation of standby systems is addressed by the HFE identification and definition process discussed in Section 2 and the further evaluation for inclusion in the PRA model is documented in Appendix A. Section 2.1 specifically discusses the review for Standby System Trains At Power under the IDENTIFICATION STEPS FOR MISCALIBRATION ERRORS.</p> <p>Table A-19: Reactor Protection and Engineered Safeguards Actuation and Table A-21: Supplemental Diesel Generator provide examples of consideration of miscalibration as standby system initiators.</p> <p>This SR is considered to be MET and there are no applicable F&Os.</p>	The SR is considered to be Met at CC II-III. There is no impact on the SFCP.

Table RAI-PRA-1-01-3 – Focused Scope Follow-On Peer Review Findings and Observations and Dispositions.

NOTE – The F&O numbers, category, applicable SRs, and Discussion are extracted from the focused scope peer review report. Sections and appendices referenced in the basis are generally from the pre-initiator HRA notebook. Refer to the peer review report (Enclosure 3 to this letter) for specific references.

F&O No.	Supporting Requirement(s)	F&O Category	Discussion	Disposition and/or Description of Impacts to the SFCP
HR-A1-01	HR-A1, HR-A2	Suggestion	<p>2.3 SUMMARY OF PRE-INITIATOR ACTION IDENTIFICATION PROCESS states that "The Unit 2 events are the same as the Unit 1 events with the exception that the first character of the basic event ID (BEID), which is the unit designator, is a "2" instead of a "1". There are a small number of events that have unique Unit 2 BEIDs because the component numbers associated with the events are dissimilar to their Unit 1 counterparts."</p> <p>This seems to imply that the Unit 1 and Unit 2 systems are identical.</p>	<p>Section 2.3 of the Pre-Initiator HRA document will be updated to clarify that Units 1 and 2 are very similar and that the HFE identification process was performed using the Unit 1 drawings, but supplemented by the Unit 2 drawings to review portions of the systems that are different, as identified in the PRA System Notebooks. As part of the text update, document that there were no design differences significant enough to result in the identification of events unique to either Unit 1 or Unit 2, but that a small number of Unit 2-specific basic events were created to reflect the differences in component numbering between the units. Since this is a suggestion-level F&O, it does not impact the PRA model's technical adequacy for the SFCP.</p>

F&O No.	Supporting Requirement(s)	F&O Category	Discussion	Disposition and/or Description of Impacts to the SFCP
HR-A3-01	HR-A3	Suggestion	<p>Appendix C provides interpretation of SR HR-A3 intent and addresses most concerns well. However, it also states "For CNP, the use of a staggered testing/maintenance program eliminates the potential for maintenance events that could result in a misalignment of diverse trains/divisions of a system or diverse systems. There may be some cases in which there are hardware configurations that make it unavoidable, however. These cases, and any specific maintenance practices that simultaneously impact multiple trains/divisions or diverse systems should be the focus of the SR HR-A3 review."</p> <p>It is not clear whether the "SR HR-A3 review" means the review of systems and procedures undertaken as part of the pre-initiator HRA to meet the SR or the peer review to determine whether or not the SR has been met. In either instance, citing any particular cases of hardware configurations and maintenance practices that were identified in the CNP analysis would be helpful.</p>	<p>Appendix C will be updated to clarify that the search for hardware configurations and specific maintenance practices that may lead to misalignments of redundant trains/divisions or diverse systems should be the focus of the HFE identification review that is performed for the HRA in order to meet SR HR-A3. In addition, HFEs from the residual heat removal system will be provided as examples of the cases characterized in the discussion. Since this is a suggestion-level F&O, it does not impact the PRA model's technical adequacy for the SFCP.</p>

F&O No.	Supporting Requirement(s)	F&O Category	Discussion	Disposition and/or Description of Impacts to the SFCP
HR-B1-01	HR-B1	Suggestion	<p>Screening is performed along with the identification process followed as discussed in Sections 2.1 and 2.2 with the systems review and operating experience review. Additional screening for detailed analysis is done on the basis of risk significance. Risk significance of HFEs is identified by applying a screening value of 1E-02 for independent events, per NUREG-1792, and applying those values in the quantification to evaluate RRRW and RAW values of the HFEs. For subsequent events, however, the HEP recommended by the NUREG has been altered. Section 3.1 states that "...the conditional HEP value for the subsequent event is reduced from 5.0E-01 to 1.0E-01. This is still considered to be conservative, but more appropriate based on the results of the plant operating experience review documented in Appendix A.2."</p> <p>However, the basis/rationale for the reduction of the conditional HEP value is not well explained in either Section 3.1 or Appendix A.2.</p>	<p>Replace the text in item 1 of Section 3.1 with the discussion from Assumption 6 of Table 4-6, which provides a better rationale for replacing the 0.5 conditional HEP with a value of 1.0E-01. Consider supplementing that text with a characterization of plant-specific operating experience to show that the frequency of even independent pre-initiator events is very low for CNP, and that it demonstrates the proposed overall probability of 1.0E-03 for common cause misalignment events is reasonable. Since this is a suggestion-level F&O, it does not impact the PRA model's technical adequacy for the SFCP.</p>

F&O No.	Supporting Requirement(s)	F&O Category	Discussion	Disposition and/or Description of Impacts to the SFCP
HR-B2-01	HR-B2	Finding	<p>The process for identifying HFEs in Section 2.1 states that systems and operating experience reviews were conducted and that "P&IDs, procedures, system descriptions and/or operating instructions [were used] to assist in the pre-initiator HEP identification process".</p> <p>The system analysis and operating experience reviews were very thorough and are documented in tables in Appendix A. They demonstrate that many pre-initiator HFEs were identified through system reviews alone.</p> <p>However, there are instances in these tables where it is not clear that procedures were also checked to ensure that the components cited should have been screened from inclusion in the pre-initiator HRA.</p> <p>For example:</p> <p>Appendix A, Table A-8: Containment Spray, Page. 138, CTS-106, where the disposition in the Include in Pre-Initiator Listing? Column for this component says: "No, assuming no common mechanism or procedure that would include multiple manual valve manipulations (of CTS-106 AND CTS-105E or CTS105W)". But there is no documentation of a subsequent procedure check that was performed to ensure that this could legitimately be screened out.</p>	<p>As noted, the HFE identification process is primarily system based; components that would lead to the failure of a train/division/system/function, if misaligned, are identified for potential inclusion in the model through the review of system piping and instrumentation diagrams. The primary focus of the process for the identification of misalignments that impact redundant trains or diverse systems is on single, shared components, but the process does include a mechanism to perform a procedure review to identify plant activities or practices that could introduce "common cause" misalignments of multiple components. However, if a single component misalignment HFE has been identified that leads to a failure that is functionally equivalent to that of multiple components, the single component misalignment HFE is considered to be representative of the misalignments that may impact the diverse trains/systems/functions etc., and no procedure based review is considered to be required to identify the more complex HFEs that involve the misalignment of multiple components.</p> <p>A draft update to the Pre-Initiator HRA documentation has been completed to clarify this part of the HFE identification process, and the results of the identification process has been reviewed to confirm that either division level/train level, single component misalignment</p>

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				<p>events were identified for each PRA system, or that one of the divisions is normally running and would expose a misalignment such that misalignments could not exist in both trains during power operation.</p> <p>Based on the results of this review, it was concluded that additional procedure reviews were not required to identify potential common cause misalignments of multiple components for any systems. In addition, the ambiguous entries in Appendix A have been updated to clarify that it was not necessary to perform a procedure review to identify potential "common cause" misalignment events for the subject components.</p> <p>Since no technical changes to the internal events model are required, this F&O has no impact on the SFCP.</p>