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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

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. ML15328A450.

2. Letter from Q. Shane 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.

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."

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By Reference 1, as supplemented by Reference 2, I&M 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 TSTF-425, Revision 3. By Reference 3, the NRC transmitted an RAI regarding the LAR submitted by I&M in Reference 1. Enclosure 1 to this letter provides an affirmation statement. Enclosure 2 to this letter provides I&M's response to the RAI contained in Reference 3. Enclosure 3 provides a table of new or revised regulatory commitments.

There are two commitments being revised by this submittal. Enclosure 11 to Reference 1 contained 3 commitments related to the Probabilistic Risk Assessment Model and Supporting Requirements (SR). The first commitment will be revised by this submittal to update the wording and add additional SRs, the remaining two commitments are unchanged. Enclosure 3 to Reference 2 contained one commitment which will be revised by this submittal to update the wording for the SRs, the first SR listed in the commitment (LE-C7) remains unchanged.

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/mll

Enclosures:

1. Affirmation
2. Response to Request for Additional Information Regarding the License Amendment Request to Adopt TSTF-425, Relocate Surveillance Frequencies Program to Licensee Control
3. Regulatory Commitments

c: R. J. Ancona, MPSC, w/o attachment to Enclosure 2
A. W. Dietrich, NRC, Washington, D.C.
MDEQ – RMD/RPS, w/o attachment to Enclosure 2
NRC Resident Inspector, w/o attachment to Enclosure 2
C. D. Pederson, NRC, Region III, w/o attachment to Enclosure 2
A. J. Williamson, AEP Ft. Wayne, w/o enclosures

Enclosure 1 to AEP-NRC-2016-48

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
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 16 DAY OF June, 2016

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-2016-48

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. ML15328A450), 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 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. The requests for additional information (RAI)s and I&M's responses are provided below.

RAI-PRA-1

Pre-Initiators

Internal Event Probabilistic Risk Assessment (IEPRA) Facts & Observations (F&Os) associated with Supporting Requirements HR-A2, HR-A3, HR-B1, HR-B2, and HR-C2 find that pre-initiator events that could have an impact on the probabilistic risk assessment (PRA) were screened from the analysis. The dispositions to these F&Os explain that the impact of these findings will be addressed in accordance with Nuclear Energy Institute (NEI) 04-10, Section 4, Step 14. NEI 04-10 allows a sensitivity study to be performed to determine the significance of modeling uncertainty "by changing the unavailability terms for PRA basic events that correspond to Structure Systems and Components (SSCs) being evaluated." It is not clear how the sensitivity study would be applied given that pre-initiator events are Human Failure Events (HFEs) rather than SSC failure events. The factor of three approximation allowed in the sensitivity study for the variance case is based on the difference in reliability between the mean and 95th percentile for typical equipment reliability distributions. It is unknown how the Donald C. Cook Nuclear Plant (CNP), Units 1 and 2, plant-specific pre-initiator distributions compare to equipment distributions.

- *Given that the failure distributions for pre-initiators could be much different from equipment distributions, explain how the sensitivity study allowed for SSCs by NEI 04-10 can be properly applied to Human Error Probabilities (HEPs) associated with pre-initiators or the equipment affected by the pre-initiators.*

I&M Response to RAI-PRA-1:

The information in the initial License Amendment Request (LAR) is being changed to reflect that the issues identified in the respective Supporting Requirements (SR) (HR-A2, HR-A3, HR-B1, HR-B2, and HR-C2) are being revised to eliminate the use of the sensitivity evaluations based on NEI 04-10, Section 4, Step 14. The disposition of the issues

from the listed SRs has been changed to reflect resolution of the issue through changes to the Human Reliability Analysis (HRA) and associated documentation with subsequent incorporation into the PRA model. Table RAI-PRA-1 provides a comparison of the original dispositions provided in Reference 1 and the current disposition as discussed in this RAI response.

The previous CNP pre-initiator HRA was replaced by a new analysis that employs the same methodology that was successfully, in that there were no significant findings, peer reviewed for the Byron and Braidwood pre-initiator HRA. The HFE identification process was performed using a systematic systems and procedure review that was augmented by an evaluation of plant specific operating experience. Risk-significant HFEs were quantified using a combination of the Technique for Human Error Rate Prediction and the detailed Accident Sequence Evaluation Program methodologies while non-risk-significant events were retained in the model with screening HEPs. The documentation provides a description of the methodology that was used as well as a record of both the identification and quantification processes.

The pre-initiator analysis was re-performed in its entirety and the results were incorporated into the Internal Events modeling. Refer to Table RAI-PRA-1 for the specific resolution of each SR. Information in this table was developed from the latest IEPRA working model. These resolutions are currently being incorporated into an updated Model of Record (MOR), which will be completed prior to the development of any surveillance extension assessment.

Initial model re-quantification with the resolution of the F&Os associated with the SRs listed above resulted in a moderate increase in overall Internal Events Core Damage Frequency (CDF) and Large Early Release Frequency (LERF). From the specific perspective of an individual surveillance extension, the risk impact is expected to range from minor to negligible due to the overall dominance of equipment reliability impacts on Surveillance Frequency extension efforts. In addition, the nature of the endorsed process in NEI 04-10 of evaluating the delta risk (CDF and LERF) impacts also will reduce the overall impact of the issues associated with the identified SRs.

Table RAI-PRA-1 – SR Disposition Comparison		
F&O	**Submittal Response**	**Current Disposition**
HR-A2	Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Pre-Initiator HFE screening has been re-evaluated to include miscalibrations that can have an adverse impact on the automatic initiation of standby safety equipment as stated by the SR. The result of this re-evaluation has been incorporated into the working version of the HRA assessment, notebook and PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
HR-A3	Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Pre-Initiator HFE screening has been re-evaluated to include cross-train and redundant equipment, and miscalibrations. Pressurizer pressure and containment pressure are now linked to Engineered Safety Features Actuation System (ESFAS) via the new ESFAS modeling. Both of these items have been incorporated into the working version of the HRA assessment, notebook and the PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
HR-B1	Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Pre-Initiator HFE screening has been re-evaluated to include mispositionings that could impact support systems. The result of this re-evaluation has been incorporated into the working version of the HRA assessment and notebook and PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
HR-B2	Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Pre-Initiator HFE screening has been re-evaluated to include miscalibrations and mispositionings that could impact support systems. The result of this re-evaluation has been incorporated into the working version of the HRA assessment and notebook and PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.

Table RAI-PRA-1 – SR Disposition Comparison		
F&O	**Submittal Response**	**Current Disposition**
HR-C2	Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Pre-Initiator HFE screening has been re-evaluated to include failures resulting from not restoring equipment following activities which make equipment unavailable. This review was augmented by a review of relevant operating experience and no additional failure modes (beyond those identified in the initial analysis) were identified during the review. The result of this re-evaluation has been incorporated into the working version of the HRA assessment and notebook and PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.

Upon completion of the HRA notebook review and signoff, and the establishment of the new MOR with the revised HRA assessment results, the F&Os associated with the above SRs will be considered closed.

RAI-PRA-2

Human Reliability Analysis (HRA) Incompleteness

A number of F&O dispositions state that deviations from the supporting requirements (HR-D3, HR-G6, HR-I1, and HR-I2) were not important to the application. The F&O associated with HR-D3 finds that Performance Shaping Factors were not adequately addressed. The F&O associated with HR-G6 found the HRA consistency check insufficient. The F&Os associated with HR-I1 and HR-I2 found the HRA documentation inadequate to support PRA upgrades, PRA applications, and peer review. Considering the licensee's assessment of the F&Os and their disposition for this license amendment request (LAR), it does not appear that the licensee's HRA was complete at the time of the peer review. Two options are available for addressing this issue.

a. *Demonstrate quantitatively that the contribution to Core Damage Frequency (CDF)/large Early Release Frequency (LERF) from HRA for those basic events potentially affected by the requested changes in surveillance test intervals (STIs) is negligible; or*

b. *Conduct a focused-scope peer review for the HR technical element based on the enhancements made since the 2015 peer review, and adequately disposition any remaining or new F&Os.*

I&M Response to RAI-PRA-2:

The information in the initial LAR is being changed to reflect that the disposition of the issues identified in the respective SRs (HR-D3, HR-G6, HR-I1, and HR-I2) is being revised to eliminate the

use of the sensitivity evaluations based on NEI 04-10, Section 4, Step 14. The disposition of the issues from the listed SRs has been changed to reflect resolution through changes to the HRA with subsequent incorporation into the PRA model. Table RAI-PRA-2 provides a comparison of the original dispositions provided in Reference 1 and the current disposition as discussed in this RAI response.

The following actions have been completed and incorporated into the Internal Events modeling for the post-initiator portion of the HRA:

- Re-performed operator interviews and incorporated insights into the analysis
- Reviewed all HEPs in the calculator to confirm or create the basis for the total time available
- Filled in missing analysis details (cues, scenario descriptions) in the HRA calculator
- Dependency analysis was performed following all updates to check for new Joint-HEP combinations

Refer to Table RAI-PRA-2 for the specific resolution of each SR. Information in this table was developed from the latest IEPRA working model. These resolutions are currently being incorporated into an updated MOR, which will be completed prior to the development of any surveillance extension assessment. These resolutions to the peer review identified issues do not constitute a change in method as described in the American Society of Mechanical Engineers (ASME) Combined Standard. Therefore, a focused scope peer review on the resolutions is not warranted. However, to ensure an adequate resolution to the issue was performed, the tasks performed to complete the resolution of the F&Os associated with these SRs will be reviewed by qualified personnel to confirm the adequacy of the resolution as part of the updated MOR approval. Any comments generated by the review will be addressed to the reviewer's satisfaction prior to the approval of the HRA documentation and model approval. This task will be completed prior to the implementation of the Technical Specification Task Force (TSTF)-425 LAR.

Initial model re-quantification with the resolution of the F&Os associated with the SRs listed above resulted in a moderate increase in overall Internal Events CDF and LERF. From the specific perspective of an individual surveillance extension, the risk impact is expected to range from minor to negligible due to the overall dominance of equipment reliability impacts on Surveillance Frequency extension efforts. In addition, the nature of the endorsed process in NEI 04-10 of evaluating the delta risk (CDF and LERF) impacts also will reduce the overall impact of the issues associated with the identified SRs.

Table RAI-PRA-2 – SR Disposition Comparison		
F&O	**Submittal Response**	**Current Disposition**
HR-D3	CNP emergency operating procedures follow emergency response guidelines and are generally of high quality. Control Room layouts are routinely trained on and familiar to operators. Addressing this issue is not expected to result in changes to HRA values. Pre-initiator HRA could have an impact on individual surveillance frequency extensions. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	The Performance Shaping Factors have been re-assessed, documented, and incorporated into the working version of the HRA assessment, notebook and the PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
HR-G6	This evaluation is related to a consistency check which is not expected to yield any changes to the model results, so its impact on the application is expected to be minor.	An updated consistency check has been performed along with post-initiator HRA update. Improved documentation of these consistency checks will be incorporated into the next revision of the HRA notebook. This notebook will be issued prior to the development of any surveillance extension assessment.
HR-I1	This SR is a documentation SR, so there is no impact on this application. Refer to the other HR SRs listed above for specific technical concerns with the pre and post-initiator HFEs (HR-A1,-A2,-A3, -B1, -B2, -C2 for pre-initiators and HR-D3, -E3, -E4, -G4,-G5, -G6 for post-initiators).	The documentation issues related to the referenced SRs are being addressed and will be incorporated into the next revision of the HRA notebook. This notebook will be issued prior to the development of any surveillance extension assessment. Any identified modeling changes will be incorporated into the PRA model and a new MOR will be issued prior to the development of any surveillance extension assessment.

Table RAI-PRA-2 – SR Disposition Comparison		
F&O	**Submittal Response**	**Current Disposition**
HR-I2	This SR is a documentation SR, so there is no impact on this application. Refer to the other HR SRs listed above for specific technical concerns with the pre and post-initiator HFEs (HR-A1,-A2,-A3, -B1, -B2, -C2 for pre-initiators and HR-D3, -E3, -E4, -G4,-G5, -G6 for post-initiators).	The documentation issues related to the referenced SRs are being addressed and will be incorporated into the next revision of the HRA notebook. This notebook will be issued prior to the development of any surveillance extension assessment. Any identified modeling changes will be incorporated into the PRA model and a new MOR will be issued prior to the development of any surveillance extension assessment.

Upon completion of the HRA notebook review and signoff, and the establishment of the new MOR with the revised HRA assessment results (if needed), the F&Os associated with the above SRs will be considered closed.

RAI-PRA-3

HRA Inadequacies to be Addressed with a Sensitivity Study

IEPRA F&Os associated with Supporting Requirements HR-E3 and HR-GS found inadequacies in the HRA that could impact PRA results due to the lack of operator interviews to confirm interpretation of procedures, and the lack of a sufficient bases for the estimation of operator response times. The dispositions to these F&Os explain that the impact of these findings will be addressed in accordance with NEI 04-10, Section 4, Step 14. NEI 04-10 allows a sensitivity study to be performed to determine the significance of modeling uncertainty "by changing the unavailability terms for PRA basic events that correspond to SSCs being evaluated." It is not clear how the sensitivity study meant for SSCs would be applied, given that the findings are associated with input to the development of HEPs. The factor of three approximation allowed in the sensitivity study for the variance case is based on the difference in reliability between the mean and 95th percentile for typical equipment reliability distributions. It is unknown how CNP plant-specific failure distribution for HFEs compares to equipment distributions.

- *Given that the failure distributions for HEPs could be much different from equipment distributions, explain how the sensitivity study allowed for SSCs by NEI 04-10 can be properly applied to HFEs or equipment affected by HFEs.*

I&M Response to RAI-PRA-3:

The information in the initial LAR is being changed to reflect that the issues identified in the respective Internal Events SRs (HR-E3 and HR-G5) is being revised to eliminate the use of the sensitivity evaluations based on NEI 04-10, Section 4, Step 14. The disposition of the issues from the listed SRs has been changed to reflect resolution of the issue through changes to the HRA with subsequent incorporation into the PRA model. Table RAI-PRA-3 provides a comparison of the original dispositions provided in Reference 1 and the current disposition as discussed in this RAI response.

From an overall perspective for the post-initiator HRA, the following actions have been completed and incorporated into the Internal Events modeling:

- Re-performed operator interviews and incorporated insights into the analysis
- Reviewed all HEPs in the calculator to confirm (or in some instances create) the basis for the total time available
- Filled in missing analysis details (cues, scenario descriptions) in the HRA calculator
- Dependency analysis was performed following all updates to check for new Joint-HEP combinations

Refer to Table RAI-PRA-3 for the specific resolution of each SR. Information in this table was developed from the latest IEPRA working model. These resolutions are currently being

incorporated into an updated MOR, which will be completed prior to the development of any surveillance extension assessment.

Initial model re-quantification with the resolution of the F&Os associated with the SRs listed above resulted in a moderate increase in overall Internal Events CDF and LERF. From the specific perspective of an individual surveillance extension, the risk impact is expected to range from minor to negligible due to the overall dominance of equipment reliability impacts on Surveillance Frequency extension efforts. In addition, the nature of the endorsed process in NEI 04-10 of evaluating the delta risk (CDF and LERF) impacts also will reduce the overall impact of the issues associated with the identified SRs.

Table RAI-PRA-3 – SR Disposition Comparison

F&O	Submittal Response	Current Disposition
HR-E3	Operator interviews were done during initial individual plant evaluation development but were not well documented. Additionally, CNP includes PRA related actions in the Time Critical Operator Action program with timings that are validated on a periodic basis. This issue is not expected to result in significant model changes. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	Post-initiator HRA updates have been performed to include more detailed operator interviews with specific review of the necessary details as identified in the SR. This information is being incorporated into the working version of the HRA analysis and notebook with subsequent incorporation into the PRA model. The HRA notebook will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
HR-G5	Estimates of completion and response times are generally realistic or slightly conservative, so the impact on this application is expected to be minor. The impact of this finding to specific surveillance extensions will be addressed in accordance with NEI 04-10, Section 4, Step 14.	Post-initiator HRA updates have been performed with detailed review of stated timings for all events, ensuring that all timings have a basis or a new basis is developed from operator interview and/or thermal-hydraulic calculations. This information is being incorporated into the working version of the HRA analysis and notebook with subsequent incorporation into the PRA model. The HRA notebook (and Success Criteria notebook for supporting Modular Accident Analysis Program (MAAP) runs) will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.

Upon completion of the HRA notebook review and signoff, and the establishment of the new MOR with the revised HRA assessment results (if needed), the F&Os associated with the above SRs will be considered closed.

RAI-PRA-4

PRA Update Commitments

In the dispositions of the IEPRA, Internal Flooding PRA (IFPRA), and Fire PRA (FPRA) F&Os associated with Supporting Requirements SY-B10, HR-G4, DA-C15, IFSN-A16, IFSN-A17, IFEV-A8, IFQU-A3, LE-E1, PRM-B14, and PRM-B15, commitments were made to perform updates to the PRA in order to resolve the F&Os prior to implementation of the risk-informed surveillance frequency control program (SFCP). It appears that these PRA updates are needed to support future STI evaluations. For the F&O associated with SY-B10, the disposition states that a more detailed PRA model is needed prior to program implementation. For the F&O associated with HR-G4, the disposition indicates that the time available for operator actions will be updated based on current Modular Accident Analysis Program (MAAP) analyses and other information prior to program implementation. For the F&Os associated with IFSN-A16, IFSN-A17, IFEV-A8, and IFQU-A3, it appears that the committed updates are needed because scenarios currently excluded will be incorporated into the PRA. For the F&O associated with DA-C15, the disposition states that credit for the cited repair will be removed. For the F&Os associated with LE-E 1, PRM-B 14, and PRM-B 15, operator actions and bypass pathways will be reviewed and incorporated into the PRA as needed and LERF documentation will be completed for the Fire PRA prior to program implementation.

In addition to the commitments made in the F&O dispositions, Section 3 of the LAR states that as part of the STI evaluations, each supporting requirement will be re-examined, and those not resolved as meeting CC-II will be evaluated in a sensitivity study using guidance from NEI 04-10, Section 4, Step 14. This statement implies that PRA updates needed to resolve F&Os may not yet be implemented at the time an STI evaluation is performed.

a. *Explain how the F&Os cited above, which have the potential to impact the application, have been resolved. Alternatively, explain why the F&Os are not important to this application.*

b. *Similar to the request made in RAI-PRA-1 and RAI-PRA-3, for F&Os that will be evaluated using the sensitivity study allowed by NEI 04-10, explain how the excluded and not-yet updated PRA modeling will be evaluated for the F&Os not directly associated with an SSC (i.e., MAAP runs that are not yet updated to establish the time available for operator actions, and unconfirmed door flood loading bases for the IFPRA).*

I&M Response to RAI-PRA-4:

Item a

As noted in Enclosure 11 of the original submittal (Reference 1) and Enclosure 3 of the supplement to the original submittal (Reference 2), commitments remain in place to address the issues identified by the peer review for SRs SY-B10, HR-G4, DA-C15, IFSN-A16, IFSN-A17, IFEV-A8, IFQU-A3, LE-E1, PRM-B14, and PRM-B15 prior to implementation of the program. The work to perform these tasks is either in-progress or has been completed and incorporated into documentation and the PRA model. Issuance of a new MOR will occur when all of the committed tasks have been completed. This will occur prior to the performance of any surveillance frequency adjustment per the SFCP. Table RAI-PRA-4 provides a current status of the committed actions. The status of completed modeling items is derived from the latest IEPRA working model.

Item b

As noted in the response to "item a" for this RAI, the commitment to address the issues identified by the listed SRs such as, development of MAAP runs to support operating timing assumptions and confirmation of the door loading basis for internal flooding concerns, remains in effect and will be performed prior to program implementation and development of a surveillance extension assessment. For the list of SRs provided in the RAI question above, no use of the sensitivity process is anticipated. However, it should be noted that per Step 5 of the endorsed guidance in NEI 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b Risk-Informed Method for Control of Surveillance Frequencies", gaps "...to Capability Category (CC)-II requirements from the endorsed PRA standards in the Regulatory Guide (RG) and the identified key sources of uncertainty serve as inputs to identifying appropriate sensitivity cases in Step 14 below." For any assessment of a surveillance to change the existing frequency, a review of these "gaps" must be performed and an evaluation (qualitative or quantitative) performed to confirm the level of the impact on the specific surveillance change. For example, with the exception of surveillance tests specifically associated with containment performance, LERF is not expected to drive the risk impact of a change in the surveillance frequency for any hazard. In these cases, a qualitative "sensitivity" may be performed to justify the application of CC-I SRs associated with LERF modeling to the specific surveillance change.

Table RAI-PRA-4 provides a summary of the current status of the resolution to each of the identified SRs in the RAI question above. The status of completed modeling items is derived from the latest IEPRA working model.

Table RAI-PRA-4 – SR Response Status		
F&O	**Submittal Response**	**Additional Information**
SY-B10	Modeling of actuation signals will be expanded to meet CC-II. For surveillance extensions not directly related to actuation signals, the impact of the current simplified modeling is expected to be negligible. For extensions related to actuation signals, the more detailed model will be needed. This finding will be resolved prior to program implementation.	Updated modeling of the Reactor protection system / engineered safety feature actuation system has been incorporated into the working version of the PRA model. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
HR-G4	Review and update of HRA timing will be completed prior to program implementation.	Post-initiator HRA updates have been performed with detailed review of stated timings for all events, ensuring that all timings have a basis or a new basis is developed from operator interview and/or thermal-hydraulic calculations. This information is being incorporated into the working version of the HRA analysis and notebook with subsequent incorporation into the PRA model. The HRA notebook (and Success Criteria notebook for supporting MAAP runs) will be signed off and the PRA model will be approved as the MOR prior to the development of any surveillance extension assessment.
DA-C15	Credit for repair will be removed prior to program implementation until a new basis is developed	Credit for the repair of equipment has been removed from the modeling in the working version of the PRA model. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.

Table RAI-PRA-4 – SR Response Status		
F&O	**Submittal Response**	**Additional Information**
IFSN-A16	The quantitative screening will be rechecked and any new scenarios will be added to the model prior to program implementation.	Work to address this F&O is in-progress. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
IFSN-A17	Evaluation of the assumption related to doors could impact the model and results if new flooding pathways are identified. This evaluation will be performed and model changes implemented prior to program implementation.	Work to address this F&O is in-progress. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
IFEV-A8	The quantitative screening will be rechecked and any new scenarios will be added to the model. This evaluation will be performed and model changes implemented prior to program implementation.	Work to address this F&O is in-progress. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
IFQU-A3	The quantitative screening will be rechecked and any new scenarios will be added to the model prior to program implementation.	Work to address this F&O is in-progress. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
LE-E1 (FPRA)	The effects of fire on LE-related operator actions will be reviewed and any necessary modifications will be added to the model prior to program implementation.	Work to address this F&O is in progress. The effects of fire on LE-related operator actions will be reviewed and any necessary modifications will be added to the model prior to program implementation. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.

Table RAI-PRA-4 – SR Response Status		
F&O	**Submittal Response**	**Additional Information**
PRM-B14	The effects of fire on LERF bypass pathways will be reviewed and any necessary modifications will be added to the model prior to program implementation.	Work on this F&O is in progress. A complete review of the effects of Fire on LERF bypass pathways will be completed prior to the development of a surveillance frequency assessment. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.
PRM-B15	This SR requires documentation that the systems analysis, accident sequence analysis, and HRA in the Fire LERF model meets the relevant requirements of Part 2 of ASME/ANS-RA-Sa-2009 in the context of fire events. The Fire LERF notebook will be updated to include documentation of these requirements prior to program implementation.	A full re-integration of the FPRA plant response model with the updated Internal Events model is in progress. Once completed, the documentation for the Fire PRA MOR will be updated to include the required documentation. Final resolution and F&O closure will be attained when the PRA model is approved as the new MOR. This will occur prior to the development of a surveillance frequency assessment.

RAI-PRA-5

Use of Surveillance Data

Based on the IEPRA F&O associated with Supporting Requirement DA-C10 and its disposition, it appears that surveillance tests may not have been reviewed for use in determining the demand count of plant-specific components. Considering that several component failure rates could be affected, it is not apparent how the licensee concluded that the resolution of this finding would have only a "minor or negligible" impact on the PRA.

- *Explain how Supporting Requirement DA-C10 was met.*

I&M Response to RAI-PRA-5:

Data collection was performed through discussions with System Engineers to address required information such as component demands (valve strokes, pump starts and so forth), run time, unavailability and failures. Included with the discussion of component demands were those that result from the performance of surveillance tests. This information was used to develop the component failure probability. The main concern of the peer reviewer was that this was not documented sufficiently in the Data notebook. While not explicitly documented, the consideration of surveillance test demands was performed. As an example, the data for systems and components monitored under the MSPI process was taken directly from the Consolidated Data Entry program used for MSPI which includes surveillance related demands.

RAI-PRA-6

F&Os for LE Supporting Requirements Met at only CC-I with Inadequate Dispositions

A number of the dispositions to F&Os associated with LERF supporting requirements that meet CC-I provide minimal information without sufficient detail to determine the extent and validity of the disposition (F&Os for Supporting Requirements LE-C1, LE-C2, LE-C5, LE-C10, LE-C11, LEC12, LE-C13, and LE-E2). The dispositions to each of these F&Os state "CC-I is considered to be sufficient to support applications for this [supporting requirement]." The F&O dispositions do not explain why the PRA modeling is sufficient to support the SFCP.

- *Explain how the modeling associated with each of these supporting requirements is sufficient to support the SFCP, providing sufficient detail to support the explanation.*

I&M Response to RAI-PRA-6

The LERF modeling employed for the CNP PRA model is considered to be a simplified level of modeling using methods in NUREG/CR-6595, Revision 1 and WCAP-16431. These methods produce reasonable results but in general may provide a slight overstatement of the LERF contribution. Since these results may provide conservative (vice realistic) results, the standard assigns a lower CC to these less detailed methods.

From the specific perspective of an individual surveillance extension, the risk impact (associated with improving the CC for the identified SRs from I to II) is expected to be negligible due to the overall dominance of equipment reliability impacts on Surveillance Frequency extension efforts. In addition, the nature of the endorsed process in NEI 04-10 of evaluating the delta risk (CDF and LERF) impacts also will reduce the overall impact of the issues associated with the identified SRs.

Since the evaluation of the risk impact is performed using a delta risk approach, the issues associated with the CNP simplified LERF modeling, as identified by the peer review team, will have a negligible impact on the evaluation of any surveillance frequency change.

The peer review report concluded that "these conservatisms generally do not impact the ability to perform PSA applications using LERF". Details of how each supporting requirement may impact the SFCP are shown in Table RAI-PRA-6.

Table RAI-PRA-6: LERF SRs at CC-I		
SR	**F&O Issue**	**Impact on SFCP**
LE-C1	The CNP LERF analysis follows methods in WCAP-16341 and NUREG/CR-6595, Revision 1. For LE-C1 CC-II, it is required to compare containment challenges with containment structural capability to identify accident progressions that have the potential for LERF.	Component failure probabilities do not impact containment structural capability or the magnitude of a potential containment challenge. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C2	The CNP LERF analysis follows methods in WCAP-16341 and NUREG/CR-6595, Revision 1 which is considered conservative rather than realistic. For LE-C2 CC-II, it is required to include realistic treatment of feasible operator actions in the Level 2 analysis.	Component failure probabilities do not impact the treatment of human error probabilities in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C5	The CNP LERF analysis follows methods in WCAP-16341 and NUREG/CR-6595, Revision 1 which is considered conservative rather than realistic. For LE-C5 CC-II, it is required to use more realistic generic or plant-specific system success criteria for significant accident progression sequences.	Component failure probabilities do not impact the development of system success criteria in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C10	No credit is taken for survivability of equipment or operator actions in adverse environments. For LE-C10 CC-II, it is required to review significant accident progression sequences to see if additional operator actions or further equipment operation in adverse environments could reduce LERF.	Component failure probabilities do not impact the development of additional operator actions or equipment survivability in adverse environments in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.

Table RAI-PRA-6: LERF SRs at CC-I		
SR	**F&O Issue**	**Impact on SFCP**
LE-C11	Containment failure equals LERF and ends the analysis. No events beyond containment failure are postulated. For LE-C11 CC-II, it is required to justify any credit given for expanded equipment survivability or additional operator actions after containment failure.	Component failure probabilities do not impact the development of additional operator actions or equipment survivability after containment failure in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C12	Containment failure equals LERF and ends the analysis. No events beyond containment failure are postulated. For LE-C12 CC-II, it is required to review significant accident progression sequences to see if additional operator actions or further equipment operation after containment failure could reduce LERF.	Component failure probabilities do not impact the development of additional operator actions or equipment survivability after containment failure in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C13	Bypass was a deterministic event (YES or NO). No source terms or scrubbing or decontamination was evaluated. All Steam Generator Tube Rupture sequences go to LERF. For LE-C13 CC-II, it is required to have a more realistic containment bypass analysis and justify any credit for scrubbing of the radioactive release.	It is unlikely that any of the expected component failure probabilities that would be considered in the SFCP would impact the ability to take credit for scrubbing a release occurring due to containment bypass. Such credit for scrubbing is not currently included in the model (i.e., assumed not available). If any equipment that could potentially be used for scrubbing a release could have a modified failure probability due to changes by the SFCP, it's potential effect on such potential credit will be evaluated qualitatively since it would have no quantitative impact on the current LERF calculation.

Table RAI-PRA-6: LERF SRs at CC-I		
SR	**F&O Issue**	**Impact on SFCP**
LE-E2	Data is taken from NUREG/CR-6595 or WCAP-16341. For LE-E2 CC-II, it is required to use more realistic phenomenological parameter estimates for significant accident progression sequences.	Component failure probabilities do not impact the development of phenomenological parameter estimates (e.g., containment failure probability, induced steam generator tube rupture probability) in the Level 2 analysis. Any changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.

RAI-PRA-7

Overestimation of STIs because of Conservative Modeling

A number of dispositions to F&Os concerning LERF explain that the modeling relevant to a supporting requirement is conservative (i.e., LE-C2, LE-C5, LE-D1, LE-D2, and LE-D3). For many other supporting requirements, F&Os indicate that plant containment system functionality that could have been credited was not credited in the PRAs. Conservatisms in LERF related system modeling can lead to overestimation of STIs, particularly for STI evaluations performed for containment systems that were excluded from the modeling.

- *Explain how conservative modeling of LERF will not lead to overestimation of certain STIs.*

I&M Response to RAI-PRA-7

As discussed in the response to RAI-PRA-6, the conservatism noted above is the basis for not achieving the more realistically driven CC-II assessment for the majority of the LERF SRs. It is expected that the less realistic LERF treatment from the use of methods in NUREG/CR-6595, Revision 1 and WCAP-16431 will lead to an overestimation of the LERF impact. This overestimation may result in certain surveillance changes being unable to be pursued until more realistic LERF / Level 2 modeling is implemented for the PRA. As an alternative, the station could elect to perform sensitivity evaluations, either quantitative or qualitative, to address the overestimation. However, any performance of these aspects of a surveillance change assessment would be performed in accordance with the guidance contained in NEI 04-10, Revision 1.

The resulting overall risk impact from the resolution of the F&Os associated with the SRs listed above is expected to be minor. From the specific perspective of an individual surveillance extension, the risk impact is expected to range from minor to negligible due to the overall dominance of equipment reliability impacts on Surveillance Frequency extension efforts. In addition, the nature of the endorsed process in NEI 04-10 of evaluating the delta risk (CDF and LERF) impacts also will reduce the overall impact of the issues associated with the identified SRs.

For the IEPRA, SRs LE-C2 and LE-C5 are addressed in the response to RAI-PRA-6. SRs LE-D1, LE-D2 and LE-D3 were evaluated as CC-III for the IEPRA and would be acceptable as is for the performance of surveillance extension applications.

For the FPRA, all of the LE SRs were evaluated at CC-I. Table RAI-PRA-7 provides a summary of the F&O issue and the impact on the SFCP.

Table RAI-PRA-7: LERF Overestimation from Conservatisms		
SR	**F&O Issue**	**Impact on SFCP**
LE-C2 (FPRA)	The CNP LERF analysis follows methods in WCAP-16341 and NUREG/CR-6595, Revision 1 which is considered conservative rather than realistic.	Component failure probabilities do not impact the treatment of HEP in the Level 2 analysis, so changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-C5 (FPRA)	The CNP LERF analysis follows methods in WCAP-16341 and NUREG/CR-6595, Revision 1 which is considered conservative rather than realistic.	Component failure probabilities do not impact the development of system success criteria in the Level 2 analysis, so changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-D1 (FPRA)	CNP has a plant-specific containment fragility analysis (Attachment 1 of PRA-L2 MODEL, Revision 0,) that predicts the ultimate containment capacity and the location of containment failure on pressure. However, it is not clear if and how this calculation was factored into the simplified Level 2 model documented in PRA-NB-FIRE-LE. Attachment 1 of PRA L2 MODEL is not cited in Section 8 of PRA-NB-FIRE-LE and not discussed in Section 6.5.1 of the report. The simplified Level 2 model appears to be using NUREG/CR-6595 if the igniters fail. For LE-D1 CC-II, it is required to perform a realistic containment capacity analysis for significant sequences.	Component failure probabilities do not impact containment structural capability or the magnitude of a potential containment challenge, so changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.

Table RAI-PRA-7: LERF Overestimation from Conservatisms		
SR	**F&O Issue**	**Impact on SFCP**
LE-D2 (FPRA)	CNP has a plant-specific containment fragility analysis (Attachment 1 of PRA-L2 MODEL, Revision 0,) that predicts the ultimate containment capacity and the location of containment failure on pressure. However, it is not clear if and how this calculation was factored into the simplified Level 2 model documented in PRA-NB-FIRE-LE. Attachment 1 of PRA L2 MODEL is not cited in Section 8 of PRA-NB-FIRE-LE and not discussed in Section 6.5.1 of the report. The simplified Level 2 model appears to be using NUREG/CR-6595 if the igniters fail. For LE-D2 CC-II, it is required to justify the applicability of generic analyses (or perform plant-specific analysis) of containment challenges to seals, penetrations, hatches, and bellows.	Component failure probabilities do not impact containment structural capability or the magnitude of a potential containment challenge, so changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.
LE-D3 (FPRA)	CNP has a plant-specific containment fragility analysis (Attachment 1 of PRA L2 MODEL, Revision 0,) that predicts the ultimate containment capacity and the location of containment failure on pressure. However, it is not clear if and how this calculation was factored into the simplified Level 2 model documented in PRA-NB-FIRE-LE. Attachment 1 of PRA L2 MODEL is not cited in Section 8 of PRA-NB-FIRE-LE and not discussed in Section 6.5.1 of the report. The simplified Level 2 model appears to be using NUREG/CR-6595 if the igniters fail. For LE-D3 CC-II, it is required to justify the applicability of generic analyses (or perform plant-specific analysis) supporting the impact of containment failure location.	Component failure probabilities do not impact containment structural capability or the magnitude of a potential containment challenge, so changes to surveillance frequencies would have no impact on any conservatisms due to meeting this SR at only CC-I.

RAI-PRA-8

Modeling Basis for Reactor Coolant Pump (RCP) Seals

Enclosure 3, Section 6.1 of the LAR states that, "[t]he current PRA model utilizes the Pressurized Water Reactor Owners Group guidance (Reference 11) for PRA modeling of the shutdown seals, supported by the Westinghouse Owners Group 2000 RCP seal failure model (Reference 12), both of which are industry consensus models." Reference 11 is the PWROG-14001-P, PRA Model for the Generation III Westinghouse Shutdown Seal, Revision 1, July 2014. Reference 12 is WCAP-15603, WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse Pressurized Water Reactors, Revision 1-A, June 2003. The RCP seal models in Reference 11 and Reference 12 are two different RCP seal models with major differences in the probability and magnitude of seal failure.

a. *Which RCP seals are currently installed at CNP?*
b. *Which RCP seal model is in the current PRA, the model in Reference 11 or the model in Reference 12?*
c. *The model in Reference 12 has been accepted by the staff, but the model in Reference 11 is still under review. The model in Reference 11 should not be used to support changes to surveillance intervals until an accepted version is available. Clarify how the RCP seal model will be used in surveillance interval-related calculations until an accepted version of Reference 11 is available*

I&M Response to RAI-PRA-8

Item a
CNP currently has the Generation III Westinghouse Shutdown Seals installed in the Reactor Coolant Pumps in both Units.

Item b
Both models are used in the development of the PRA model response. For those sequences where the Generation III Shutdown seal is successful, the PWROG-14001-P, PRA Model for the Generation III Westinghouse Shutdown Seal, Revision 1, July 2014 seal model information is used. This model provides the information needed to establish leakage characteristics, inputs to thermal-hydraulic calculations and establishes required equipment success criteria. For those sequences where the Generation III Shutdown Seal is failed, the WCAP-15603, WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse Pressurized Water Reactors, Revision 1-A, June 2003 seal model information is used. For these sequences, this model establishes the leakage characteristics, inputs to the thermal-hydraulic calculations and equipment success criteria.

Item c
CNP will not model the impact of the Generation III Shutdown Seals for the performance of surveillance changes performed under an approved TSTF-425 license amendment until the PWROG-14001-P, PRA Model for the Generation III Westinghouse Shutdown Seal, Revision 1, July 2014, (or equivalent report) is approved for use by the NRC. To do so would result in the use of an unapproved PRA Model.

RAI-PRA-9

Deleted

RAI-PRA-10

Peer Review of IEPRA and IFPRA

Section 3 of the LAR states that a peer review of the IEPRA and IFPRA was conducted in July 2015 against ASME RA-Sa-2009 and RG 1.200, Rev. 2, and that this peer review supersedes previous peer reviews. The LAR does not describe this peer review or provide justification for concluding that all previous peer reviews are superseded, including previously open F&Os.

a. *Explain how the peer review meets the requirements of Section 1-6 of the PRA Standard ASME RA-Sa-2009, and Section 2.2 of RG 1.200, Rev. 2, including NRC staff clarifications and qualifications.*

b. *Describe the scope of the peer review and explain why it is considered to supersede all previous peer reviews.*

I&M Response to RAI-PRA-10

Item a
As stated in section 1.1 of the CNP Peer review report, the purpose was:

> *The purpose of this report is to document the final results of the Peer Review of the Internal Events Probabilistic Risk Assessment (PRA) for CNP against the requirements of the American Society of Mechanical Engineers (ASME)/American Nuclear Society (ANS) PRA standard and any Clarifications and Qualifications provided in the Nuclear Regulatory Commission (NRC) endorsement of the Standard contained in Revision 2 to Regulatory Guide (RG) 1.200. This peer review was performed using the process defined in Nuclear Energy Institute (NEI) 05-04.*

Further description of the scope of the peer review is provided in Section 1.2 of the peer review report as follows:

> *This peer review was conducted to determine compliance with the ASME/ANS PRA Standard RA-Sa-2009 and RG 1.200 Revision 2.*

Item b
The scope of the internal events Peer Review was the internal events modeling including internal flooding. The review was performed by personnel selected by the Pressurized Water Reactor Owners Group (PWROG) to provide a broad range of expertise to address the high level and supporting requirements of the internal events and internal flooding portions of ASME Standard RA-Sa-2009. The scope for the peer review is listed in Table 1-1 of Reference 4 and consisted of all SRs associated with the following Internal Events sections:

- Initiating Event Analysis (IE)
- Accident Sequence Analysis (AS)
- Success Criteria (SC)
- Systems Analysis (SY)
- Human Reliability Analysis (HR)
- Data Analysis (DA)
- Quantification (QU)
- LERF Analysis (LE)
- Maintenance and Update (Standard Section 1-5)
- Internal Flood Plant Partitioning (IFPP)
- Internal Flood Source Identification (IFSO)
- Internal Flood Scenario Development (IFSN)
- Internal Flood-Induced Initiating Event Analysis (IFEV)
- Internal Flood Accident Sequences and Quantification (IFQU)

F&Os from previous peer reviews have been addressed and closed through incorporation into the PRA model. In addition, as noted in Section 1-6.1.1, Frequency, "When peer reviews are conducted on PRA upgrades, the latest review shall be considered the review of record." Following that philosophy, the most recent peer reviews for the internal events and FPRA models constitute the review of record.

RAI-PRA-11

External Hazards

Enclosure 3, Section 4.2 of the LAR does not explain how the risk from external hazards evaluated in the CNP Individual Plant Examination of External Events is updated to reflect new information when used in performing a qualitative or bounding analysis in support of STI extension evaluations in accordance with NEI 04-10, Section 4, Step 10.

- *Discuss the process for incorporating new information into these qualitative or bounding analyses, and explain how this process is sufficient to support the SFCP and the as-built as-operated plant configuration. Specifically address high winds, including updated tornado and hurricane climatology, external flooding, and seismic events, including updated site-specific ground motion response spectra.*

I&M Response to RAI-PRA-11

As noted in the original submittal, Reference 1, in Enclosure 3, Section 5, if new PRA models are developed and approved for use for external events, they will be employed in the evaluation of quantitative and qualitative insights for the scope represented.

It is recognized that the use of the available external hazard risk information from the Individual Plant Examination of External Events (IPEEE) is limited, but the NEI 04-10 methodology allows a qualitative screening or bounding analysis to provide justification for acceptability of proposed surveillance frequency changes. Therefore, the intent is not to directly use any numerical results from the IPEEE external events, but to qualitatively assess any available information to determine the impact on proposed surveillance interval changes consistent with the NEI 04-10 methodology. The qualitative information and/or the bounding analysis from the internal events analysis must be acceptable and reflective of the current plant configuration and operating experience. This information is documented for each STI change provided to the Integrated Decision Panel. Therefore, if the qualitative assessment is used it will be acceptable and reflective of the current plant configuration and operating experience.

By following Steps 10a and 10b of the NEI 04-10 guidance, the evaluation of other external events risk supporting this application will reflect and consider the current plant configuration and operating experience. The IPEEE is not a living document and has not been updated to the present plant configuration and operating experience. As a result, the other external event risk information from the IPEEE is limited to qualitative insights. For the STI change evaluations, the intent is not to directly use any numerical results from the IPEEE other external events, but to qualitatively assess any available information to determine the impact on the proposed surveillance interval changes, consistent with Step 10a of the NEI 04-10 (Reference 3) methodology. This qualitative assessment of other external event risk will include a review of applicability to the current plant configuration and operating experience. Additionally for some STI change evaluations, per Step l0b of the NEI 04-10 methodology, qualitative reasoning and very low changes to core damage frequency (ΔCDF) and large early release frequency (ΔLERF) results from the internal events analysis may be sufficient to support the STI change evaluation where Step 10b reads in part:

> *"Alternative evaluations for the impact from external events and shutdown events are also deemed acceptable at this point. For example, if the ΔCDF and ΔLERF values have been demonstrated to be very small from an internal events perspective based on detailed analysis of the impact of the SSC being evaluated for the STI change, and if it is known that the CDF or LERF impact from external events (or shutdown events as applicable) is not specifically sensitive to the SSC being evaluated (by qualitative reasoning), then the detailed internal events evaluations and associated required sensitivity cases (as described in Step 14) can be used to bound the potential impact from external events and shutdown PRA model contributors"*

Qualitative evaluation of external events risk in support of Step 10b would also include consideration of applicability to the current plant configuration and operating experience.

Therefore, by following Steps 10a and 10b of the NEI 04-10 guidance, the evaluation of other external events will reflect and consider the current plant configuration and operating experience.

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. ML15328A450.

2. Letter from Q. Shane 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. NEI 04-10, Revision 1, "Risk-Informed Technical Specifications Initiative 5b Risk-Informed Method for Control of Surveillance Frequencies"

4. WCAP-16341-P, Revision 0, "Simplified Level 2 Modeling Guidelines", November 2005

5. NUREG/CR-6595,Revision 1, "An Approach for Estimating the Frequencies of Various Containment Failure Modes and Bypass Events"

6. ASME/ANS RA-Sa-2009, "Addenda to ASME/ANS RA-S–2008 Standard for Level 1/Large Early Release Frequency Probabilistic Risk Assessment for Nuclear Power Plant Applications", February 2009

7. PWROG-14001-P, PRA Model for the Generation III Westinghouse Shutdown Seal, Revision 1, July 2014

8. WCAP-15603, WOG 2000 Reactor Coolant Pump Seal Leakage Model for Westinghouse Pressurized Water Reactors, Revision 1-A, June 2003

9. Regulatory Guide 1.200, Revision 2, "AN APPROACH FOR DETERMINING THE TECHNICAL ADEQUACY OF PROBABILISTIC RISK ASSESSMENT RESULTS FOR RISK-INFORMED ACTIVITIES", March 2009

Enclosure 3 to AEP-NRC-2016-48

REVISED REGULATORY COMMITMENTS

The following table identifies an action committed to by Indiana Michigan Power Company (I&M) in this document. Any other actions discussed in this submittal represent intended or planned actions by I&M. They are described to the U. S. Nuclear Regulatory Commission (NRC) for the NRC's information and are not regulatory commitments. All commitments discussed in this table are one-time commitments.

Commitment	Scheduled Completion Date (if applicable)
The Human Reliability Analysis Notebook will be signed off and the Probabilistic Risk Assessment (PRA) model will be approved as the model of record prior to the development of any surveillance extension assessment for: HR-A2, HR-A3, HR-B1, HR-B2, HR-C2, HR-D3, HR-G6, HR-I1, HR-I2, HR-E3, HR-G5, SY-B10, Hr-G4, DA-C15, IFSN-A16, IFSN-A17, IFEV-A8, IFQU-A3,	Prior to program implementation
Updated modeling of the reactor protection system / engineered safety features actuation system has been incorporated into the working version of the PRA model. Final resolution and Facts and Observation closure will be attained when the PRA model is approved as the new model of record prior to the development of any surveillance extension assessment for the following Supporting Requirements from RAI-PRA-4 Table: LE-E1, PRM-B14, PRM-B15 have updated status in table RAI-PRA-4	Prior to program implementation