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10 CFR 50.90

2CAN031803

March 26, 2018

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

SUBJECT: Supplemental Information Supporting the Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (TSTF-425)
Arkansas Nuclear One, Unit 2
Docket No. 50-368
License No. NPF-6

REFERENCE: Entergy Letter dated February 6, 2018, *Application for Technical Specification Change Regarding Risk-Informed Justification for the Relocation of Specific Surveillance Frequency Requirements to a Licensee Controlled Program (TSTF-425)*, Arkansas Nuclear One, Unit 2, 2CAN021802 (ML18038B354)

Dear Sir or Madam:

In accordance with the provisions of Title 10 of the Code of Federal Regulations (10 CFR Part 50.90), "Application for Amendment of License, Construction Permit, or Early Site Permit," Entergy Operations, Inc. (Entergy) submitted a request for an amendment (Reference) to the technical specifications (TSs) for Arkansas Nuclear One, Unit 2 (ANO-2).

The proposed amendment would modify ANO-2 TSs by relocating specific surveillance frequencies to a licensee-controlled program with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specification Initiative 5B, Risk-Informed Method for Control of Surveillance Frequencies."

By email dated March 19, 2018, the NRC informed Entergy that additional information is needed to support completion of the Staff's acceptance review of the referenced letter. A clarification call between the NRC and the licensee was held on March 20, 2018, in order to ensure Entergy understood the response desired. The NRC stated that the response would be required within 13 working days of the day of the clarification call. The following states the specific information requested by the NRC. The corresponding Entergy response immediately follows each bullet listed.

NRC Request:

In Attachment 2, Page 36 of 82 of the LAR, the licensee states that the large early release frequency (LERF) model was not considered in the Internal Flooding PRA, and the LAR does not present the results of its peer review. Consistent with Regulatory Position 4.2 of Regulatory Guide (RG) 1.200 and with Regulatory Issue Summary 2007-06, "Regulatory Guide 1.200 Implementation," please provide the necessary documentation to demonstrate the technical adequacy of the licensee's PRA with respect to RG 1.200, Rev. 2, as addressed below.

1. Provide a description of the LERF analysis that was considered in the 2016 Internal Flooding PRA and describe the adjustments made to the Internal Events LERF model to develop the Internal Flooding LERF model.

Entergy Response:

The internal flooding probabilistic risk assessment (PRA) model is built on the internal events PRA model for both core damage frequency (CDF) and LERF. The internal flooding LERF analysis is simply an expansion of the internal events LERF analysis. Flood-induced failures, which are detailed in the internal flooding PRA Accident Sequence Analysis Report, are entered in a database. This database is constructed for use with the Electric Power Research Institute (EPRI) FRANX software. The FRANX database and software are used to add failure logic for flood-induced equipment failures and human failure events into the PRA CAFTA model. The FRANX database links the flood-induced equipment failures and changes to human failure events with basic events in the internal events PRA model in order to quantify internal flooding risk. The same FRANX database is used for both CDF and LERF, thereby ensuring consistent treatment and inclusion of flood-induced failures regardless of the consequence being evaluated.

The internal flooding PRA LERF quantification uses the internal events PRA LERF model. Other than inserting the flood-induced failures using the FRANX software, no other adjustments are made to the internal events LERF model.

After inserting the flood-induced failures into the CAFTA logic models, the EPRI PRAQUANT software is used to quantify overall risk. The only differences between the internal flooding CDF quantification and the internal flooding LERF quantification are the selection of the top gate and the truncation value. That is, the overall process for quantification for each consequence (CDF or LERF) within the internal flooding PRA is the same.

The internal flooding model upgrade that was developed in 2016 underwent a focused-scope peer review in early 2017. Facts and observations (F&Os) which resulted from that review are currently being addressed, and associated model updates and documentation to address the F&Os are nearly complete. These tasks were performed at the end of 2017.

The ANO-2 internal events PRA models are currently being updated with the next routine model revision to the internal events PRA, which is scheduled to be completed soon. As mentioned above, changes to the internal flooding model to address F&Os from the 2017, PRA focused-scope peer review are nearly complete. These changes included adding LERF to the internal flooding PRA model. Given the imminent completion of the internal events PRA update, and because the internal flooding PRA is built on the internal events update, a

decision was made to delay finalizing the internal flooding update until after completion of the internal events update. This decision to delay was made to optimize use of resources by avoiding the administrative requirements of having two internal flooding updates within a short time period. That is, after completion of the internal events model update, the internal flooding model would then be updated. This update would have been required even if the internal flooding model update addressing the F&Os was completed and finalized at the end of last year (when most of the work to update the internal flooding model was complete). As a result, internal flooding LERF could be quantified, if necessary, using Revision 5p00 of the internal events PRA model using the FRANX database developed in 2017.

As stated, after completion of the internal events PRA model update, the internal flooding model would be updated. As described above, the internal flooding update involves use of the FRANX software to insert the flood-induced failures into the internal events PRA models and then performing the quantification. As a result, the same PRA models that would be used for internal events PRA quantification of both CDF and LERF would also be used for the internal flooding quantification. The focused-scope peer review identified no significant errors for the internal flooding accident sequences, modeling, or quantification process. Therefore, no changes in the accident sequences considered by the internal flooding PRA are expected.

2. Provide details of all changes that have been made to the LERF model since it was developed, justifying that no changes constitute a PRA upgrade as defined in the ASME/ANS PRA standard

Entergy Response:

The internal events LERF model and quantification were subjected to a peer review as part of the overall internal events PRA peer review performed in July 2008. That review used Revision 4p02 of the ANO-2 internal events PRA model. Significant findings from that peer review were resolved in Revision 5p00 of the internal events PRA model as described in the referenced submittal. No other changes to the LERF model were made. As described in the referenced submittal, the changes made in the Revision 5p00 update did not constitute a PRA upgrade.

As discussed above, the internal flooding PRA model uses the internal events model as the basis. There have been no changes in the processes used to quantify the internal events LERF model or to insert flood-induced failures into the PRA logic models since completion of the PRA peer reviews. As stated in Section 1-A.2 of the ASME PRA standard:

“However, it is not, for example, a PRA upgrade if an error or omission is addressed by using the existing methodology, and the change does not result in a significant change in risk-estimation capability. It is expected that such changes would generally be classified as PRA maintenance because, in most cases, the method of correction would be similar to that used for typical PRA maintenance where some new plant feature or change in operation is incorporated using the existing model structure and methods.”

Because the internal flooding LERF uses the same methods and models as the peer-reviewed internal events PRA model, the internal flooding LERF model is not considered a PRA upgrade.

3. If any changes do constitute an upgrade, provide the results of a focused-scope peer review complete with Facts & Observations, dispositions, and address any effects on the application.

Entergy Response:

As discussed above, no changes that would constitute a PRA upgrade were made.

Entergy believes the preceding information is in accordance with discussions held between the NRC and the licensee on March 20, 2018, and should fully support final acceptance of the referenced application.

There are no new regulatory commitments included in this submittal.

In accordance with 10 CFR 50.91, "Notice for Public Comment; State Consultation," a copy of this application, with attachments, is being provided to the designated Arkansas State Official.

If there are any questions or if additional information is needed, please contact Stephenie Pyle at 479-858-4704.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on March 26, 2018.

Sincerely,

ORIGINAL SIGNED BY RICHARD L. ANDERSON

RLA/dbb

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