FENOC™
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L-14-300

10 CFR 50.90

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT:
Beaver Valley Power Station, Unit Nos. 1 and 2
Docket No. 50-334, License No. DPR-66
Docket No. 50-412, License No. NPF-73
Response to Request For Additional Information Regarding License Amendment to Adopt Technical Specification Task Force Traveler 425 (TAC Nos. MF2942 and MF2943)

By correspondence dated October 18, 2013 (Accession No. ML13295A006), as supplemented by letter dated June 26, 2014 (Accession No. ML14177A514), FirstEnergy Nuclear Operating Company (FENOC) submitted a license amendment request for the Beaver Valley Power Station, Unit Nos. 1 and 2 (BVPS). The proposed amendment would modify the BVPS Technical Specifications by relocating specific surveillance frequencies to a licensee controlled program with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies." The proposed amendment is consistent with Nuclear Regulatory Commission (NRC)-approved Technical Specifications Task Force (TSTF) Traveler TSTF-425, Revision 3, "Relocate Surveillance Frequencies to Licensee Control – Risk Informed Technical Specification Task Force (RITSTF) Initiative 5b," with certain proposed deviations.

By correspondence dated August 28, 2014 (Accession No. ML14232A657), NRC requested additional information to complete the staff's review. FENOC's response to this request is attached.

There are no regulatory commitments established in this submittal. If there are any questions or additional information is required, please contact Mr. Thomas A. Lentz, Manager – Fleet Licensing, at (330) 315-6810.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 21, 2014.

Sincerely,

Eric A. Larson

Attachment: Response to August 28, 2014 Request for Additional Information

cc: NRC Region I Administrator
NRC Resident Inspector
NRC Project Manager
Director BRP/DEP
Site BRP/DEP Representative

By correspondence dated October 18, 2013, as supplemented by letter dated June 26, 2014, FirstEnergy Nuclear Operating Company (FENOC) submitted a license amendment request for the Beaver Valley Power Station (BVPS), Unit Nos. 1 and 2. The proposed amendment would modify the BVPS Technical Specifications by relocating specific surveillance frequencies to a licensee controlled program with the implementation of Nuclear Energy Institute (NEI) 04-10, "Risk-Informed Technical Specifications Initiative 5b, Risk-Informed Method for Control of Surveillance Frequencies."

By correspondence dated August 28, 2014, Nuclear Regulatory Commission (NRC) staff requested additional information to complete its review. The request for additional information (RAI) is presented in bold type, followed by the FENOC response.

In response to RAI 6, submitted by letter dated June 26, 2014, the licensee directed the NRC staff to a Facts and Observations (F&O) table in its National Fire Protection Administration 805 Supplement dated on February 14, 2014. The tables in the supplement included all F&Os from previous peer reviews, consistent with the information in the submittal, and some focused scope peer review F&Os for Human Reliability Analysis and Internal Flooding (IF). During the review of the IF F&Os in Table 1-4, some F&Os appear to be resolved for the Internal Events Probabilistic Risk Assessment (PRA) (in the column BVPS-1 Final Resolution), yet kept as open for the Fire PRA model.

RAI 7: Since the standby components are important for the TSTF-425 application, please explain how the likelihood of post-maintenance misalignment for the standby components are modeled in the internal events PRA.

Response:
Both the BVPS Unit 1 Revision 5a PRA model (PRA-BV1-AL-R05a) and BVPS Unit 2 Revision 5a PRA model (PRA-BV2-AL-R05a), which are the current effective reference models, include post-maintenance/test misalignments for the standby components.

The following is a brief summary of the process that was used to account for these misalignment pre-initiator human actions in the PRA models that will be used for implementation of the Technical Specifications Task Force (TSTF)-425 application. The process includes the following parts:

1. Identification and screening of potential pre-initiator human failure events
2. Quantification of pre-initiator human error probabilities
3. Incorporation of the pre-initiator human error probabilities into the RISKMAN PRA model

A brief summary of each part is provided below.

Part 1 - Identification and Screening of Potential Pre-Initiator Human Failure Events

The purpose of this step was to identify and screen potential misalignment pre-initiator human failure events. The BVPS procedures were reviewed to identify potential misalignments to be included in the PRA models as pre-initiator human failure events. This included reviewing the OSTs (Operating Surveillance Tests), BVTs (BV Test Procedures used by the System Engineers), and MSPs (Maintenance Surveillance Procedures).

Potential misalignment pre-initiator human failure events were screened from further consideration using the screening criteria presented in the American Society of Mechanical Engineers (ASME)/American Nuclear Society (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," Supporting Requirement HR-B1 (Capability Category II/III) example.

Part 2 - Quantification of Pre-Initiator Human Error Probabilities

This step quantified the pre-initiator human error probabilities for the misalignment pre-initiator human failure events that were unable to be screened. These pre-initiators human error probabilities were quantified using the Technique for Human Error Rate Prediction (THERP) methodology included in the Electric Power Research Institute (EPRI) Human Reliability Analysis (HRA) Calculator. NUREG/CR-1278, "Handbook of Human Reliability Analysis with Emphasis on Nuclear Power Plant Applications Final Report," describes the THERP approach.

Part 3 - Incorporation of the Pre-Initiator Human Error Probabilities into the RISKMAN Model

This step developed a lognormal distribution for each of the misalignment pre-initiator human failure events that were quantified, by using the EPRI HRA Calculator mean and error factor as input into the RISKMAN Data Module. A misalignment basic event was then created for each of the misalignment pre-initiator lognormal distribution data variables. These misalignment basic events were then incorporated into the PRA model system fault trees to reflect the impact of component misalignments on the mitigating system/function. Documentation of the misalignment pre-initiator identification and screening results, EPRI HRA Calculator quantification results, and the PRA model pre-initiator misalignment database variables and basic events are provided in the PRA model HRA Notebooks.