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L-22-137

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
Request for Fire Protection Program Changes

Pursuant to 10 CFR 50.90, Energy Harbor Nuclear Corp. is submitting a request to amend the renewed facility operating licenses numbered DPR-66 and NPF-73 for the Beaver Valley Power Station (BVPS), Unit Nos. 1 and 2, respectively. The proposed amendments would modify the bases for two licensing actions that were credited during the transition to the risk-informed, performance-based fire protection program in license amendments 301 and 190 (Accession No. ML17291A081).

Energy Harbor Nuclear Corp.'s detailed description and evaluation of the proposed amendments is provided in the Attachment.

NRC staff approval of the proposed amendments is requested by September 29, 2023, and the amendments shall be implemented within 60 days of approval.

There are no regulatory commitments contained in this submittal. If there are any questions or if additional information is required, please contact Mr. Phil H. Lashley, Manager - Fleet Licensing, at (330) 696-7208.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 6, 2022.

Sincerely,

A handwritten signature in blue ink, appearing to read "John J. Grabnar", written over a horizontal line.

John J. Grabnar

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Attachment: Evaluation of the Proposed Amendments

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

Attachment
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1.0 SUMMARY DESCRIPTION

Amendments 301 and 190 revised the BVPS renewed facility operating licenses to establish and maintain a risk-informed, performance-based fire protection program in accordance with the requirements of Title 10 of the Code of Federal Regulations (10 CFR) Section 50.48(c), National Fire Protection Association Standard NFPA 805. National Fire Protection Association Standard (NFPA) 805, "*Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants*," 2001 Edition, contains fundamental fire protection program and design elements in Chapter 3. Select sections or subsections of NFPA 805 Chapter 3 requirements that would not be met in the fire protection program were determined to comply by various compliance statements in the license amendment request.

One of the compliance statements credited in the transition to NFPA 805 was that it complies by previous Nuclear Regulatory Commission (NRC) approval (for those NFPA 805 Chapter 3 requirements that were not met, yet previous NRC approval of the configuration existed). Previous NRC approvals of configurations (licensing actions) were considered to be compliant for transition. The BVPS licensing actions for transition were provided in Enclosure B to a letter dated April 21, 2017 (Accession No. ML17111A882).

The proposed amendments would modify the bases for two licensing actions that were credited during the transition to the risk-informed, performance-based fire protection program in license amendments 301 and 190.

2.0 DETAILED DESCRIPTION

Energy Harbor Nuclear Corp. is proposing to modify the bases for the following two licensing actions in the April 21, 2017 letter:

- Licensing Action No. 11.05: Cable Tunnel (1-CV-3) – Lack of 20-foot Separation (III.G.2 Criteria) for BVPS Unit No. 1.
- Licensing Action No. 30: Intake Structure – Detection and 3-hour Barriers versus Sprinkler – Branch Technical Position (BTP) C.6.c for BVPS Unit No. 2.

For Licensing Action No. 11.05, part of the basis for an exemption to a lack of 20 foot separation for the cable tunnel was the availability of a total flooding Halon gaseous suppression system. While a description of the system in this licensing action did not specify whether or not the Halon system was automatic, a letter dated February 24, 2016 (Accession No. ML16055A160) stated the 1-CV-3 Halon system is normally automatic. The NRC safety evaluation for amendments 301 and 190 noted in Section 3.1.4.8 that the 1-CV-3 total flooding Halon system was normally automatic.

For Licensing Action No. 30, part of the basis for an exemption to a sprinkler system in the intake structure was that all unnecessary combustibles would be removed and only fire retardant treated lumber would be allowed within the building. The NRC safety

evaluation for amendments 301 and 190 noted this as a basis for lack of an automatic sprinkler system in the intake structure in Section 3.5.1.3.

2.1 System Design and Operation

The Unit 1 cable tunnel 1-CV-3 functions primarily as a transition area for cables routed from the service building to the electrical underground duct banks in the north yard. The redundant cables routed within the tunnel area include the Class 1E power and control cables associated with the river water pumps, the essential support equipment located in the intake structure, the alternate intake structure, and the emergency diesel generators.

The intake structure is a Seismic Category 1 structure common to both units, and contains the BVPS Unit No. 1 river water pumps and the BVPS Unit No. 2 service water pumps. The river water and service water systems are operated completely independent of each other and are designed to meet the single failure criterion.

2.2 Current Requirements

The bases, in part, for the two licensing actions 11.05 and 30 have been discussed in Section 2.0.

2.3 Reason for Proposed Change

There are two reasons for the proposed changes to the two licensing actions. In regard to Licensing Action No. 11.05, on August 18, 2021, a fire alarm was verified in 1-CV-3 and the automatic Halon discharge initiated. An Unusual Event was declared. However, no sign of an actual fire was found, and the cause of the inadvertent actuation is unknown. A failure mode analysis has been performed and equipment replaced, but the system has not been returned to service. Alternate compensatory measures are currently in place. Replacing the automatic actuation of the Unit 1 Halon fire suppression system in the 1-CV-3 cable tunnel with manual actuation would avoid potential spurious Halon discharges and the environmental impacts of those discharges, and allow operators to enter the area promptly to assist in making an emergency action level declaration.

In regard to Licensing Action No. 30, an NRC walkdown on August 31, 2021 identified large, untreated wooden cribbing that supported bay cleaning in the intake structure, and therefore did not meet the requirement of only allowing fire retardant treated lumber within the building. This issue was entered into the Energy Harbor Nuclear Corp. Corrective Action Program. Allowing the use and storage of large, untreated wooden cribbing in the intake structure would be more conducive to performing maintenance activities.

2.4 Description of Proposed Change

Amend Licensing Action No. 11.05 to remove the automatic Halon suppression system discharge function for 1-CV-3 and rely on manual actuation only.

Amend Licensing Action No. 30 to allow the use and storage of untreated cribbing timbers 6 inches by 6 inches or larger within the intake structure.

3.0 TECHNICAL EVALUATION

Changing the 1-CV-3 cable tunnel Halon fire suppression system actuation from automatic to manual has no impact to the fire probabilistic risk assessment (PRA) model because the model does not credit automatic actuation of the system.

Section 3.3.1.2, Control of Combustible Materials, of NFPA 805 contains an exception to (1) for wood used within the power block. Cribbing timbers 6 inches by 6 inches or larger shall not be required to be fire-retardant treated. The appendix to this section justifies the exception because of their difficulty to ignite and therefore, they do not represent an immediate fire threat. Allowing the use and storage of these large cribbing timbers in the intake structure has no impact on the Fire Protection Program Fundamental Elements. Furthermore, fire modeling was not performed in any of the five compartments within the intake structure as the four cubicles and the surrounding area were modeled as whole room burnup. For the multi-compartment analyses, the possibility of a transient fire or oil fire spreading from one compartment to another was considered but screened out for various reasons including detailed CFAST analyses.

4.0 REGULATORY EVALUATION

4.1 Applicable Regulatory Requirements / Criteria

10 CFR 50.48, Fire protection

Pursuant to 10 CFR 50.48(a), in part, fire protection plans are required to satisfy General Design Criterion 3 of Appendix A to 10 CFR Part 50, and include:

- Specific description of the overall fire protection program;
- Identification and the authorities of the various positions within the organization responsible for the program;
- Plans for fire protection, fire detection and suppression capability, and limitation of fire damage; and
- Specific features necessary to implement the program.

10 CFR 50.48(c) incorporates by reference the 2001 Edition of NFPA 805, with certain exceptions.

10 CFR 50 Appendix A, General Design Criterion 3, Fire protection

Structures, systems, and components important to safety shall be designed and located to minimize, consistent with other safety requirements, the probability and effect of fires and explosions. Noncombustible and heat resistant materials shall be used wherever practical throughout the unit, particularly in locations such as the containment and control room. Fire detection and fighting systems of appropriate capacity and capability shall be provided and designed to minimize the adverse effects of fires on structures, systems, and components important to safety. Firefighting systems shall be designed to assure that their rupture or inadvertent operation does not significantly impair the safety capability of these structures, systems, and components.

The proposed changes do not affect compliance with these regulations.

4.2 No Significant Hazards Consideration Analysis

Energy Harbor Nuclear Corp. requests amending the renewed facility operating licenses numbered DPR-66 and NPF-73 for the Beaver Valley Power Station (BVPS), Unit Nos. 1 and 2, respectively. The proposed changes would modify the bases for two licensing actions that were credited during the transition to the risk-informed, performance-based fire protection program in license amendments 301 and 190. The proposed changes would change the Unit 1 1-CV-3 cable tunnel Halon fire suppression system actuation from automatic to manual only, as well as allow the use and storage of 6 inches by 6 inches or larger untreated wooden cribbing in the common intake structure for both units.

Energy Harbor Nuclear Corp. has evaluated whether or not a significant hazards consideration is involved with the proposed amendments by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Changing the 1-CV-3 cable tunnel Halon fire suppression system actuation from automatic to manual has no impact to the fire PRA model because the model does not credit automatic actuation of the system.

Allowing the use and storage of 6 inches by 6 inches or larger untreated wood cribbing timbers in the intake structure will not significantly increase the probability or consequences of an accident previously evaluated as the intake structure is currently modeled as whole room burnup. The large cribbing timbers are difficult to ignite and therefore, do not represent an immediate fire threat.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

Changing the 1-CV-3 cable tunnel Halon fire suppression system actuation from automatic to manual will not create the possibility of a new or different kind of accident from any previously evaluated because the fire PRA model does not currently credit automatic actuation of the system.

As the intake structure is currently modeled as whole room burnup, allowing the use and storage of 6 inches by 6 inches or larger untreated wood cribbing timbers in the intake structure will not have any impact on creating the possibility of a new or different kind of accident from the fire modelling previously evaluated.

No new credible accidents are created by the proposed changes. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

Changing the 1-CV-3 cable tunnel Halon fire suppression system actuation from automatic to manual has no impact to the fire PRA model because the model does not credit automatic actuation of the system.

Allowing the use and storage of 6 inches by 6 inches or larger untreated wood cribbing timbers in the intake structure will not significantly reduce a margin of safety as the intake structure is currently modeled as whole room burnup. The large cribbing timbers are difficult to ignite and therefore, do not represent an immediate fire threat.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Based on the above, Energy Harbor Nuclear Corp. concludes that the proposed amendment does not involve a significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and accordingly, a finding of “no significant hazards consideration” is justified.

4.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

5.0 ENVIRONMENTAL CONSIDERATION

A review has determined that the proposed amendment would change a requirement with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or would change an inspection or surveillance requirement. However, the proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluents that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.