UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 9, 2021

Mr. Rod L. Penfield
Site Vice President
Energy Harbor Nuclear Corp.
Perry Nuclear Power Plant
P.O. Box 97, Mail Stop A-PY-A290
Perry, OH 44081-0097

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 – REGULATORY AUDIT FOR THE REVIEW OF LICENSE AMENDMENT REGARDING REVISING THE FLOOD HAZARD PROTECTION SCHEME (EPID L-2021-LLA-0067)

Dear Mr. Penfield:

By letter dated April 7, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21106A027), Energy Harbor Nuclear Corp (EHNC, the licensee) submitted license amendment requests for Perry Nuclear Power Plant (PNPP), to revise the Updated Safety Analysis Report (USAR) to change the methodology used for analysis of flooding hazards and drainage within the local intense precipitation (LIP) domain and reflect the results from the new analysis. Based on the new analysis, a new flood hazard protection scheme is also proposed for PNPP. In addition, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.12, EHNC requests exemptions to credit non-safety related protection features including: (1) permanent (passive) and temporary (deployable), as flood barriers, and (2) the plant storm drain system in mitigation of flood levels during a LIP event.

To improve the efficiency of the U.S. Nuclear Regulatory Commission (NRC) reviews, the licensee's representatives and the NRC staff have discussed the use of an audit using an online reference portal that would allow the NRC staff limited read-only access to the basis documents and other reference materials cited in the applications. The NRC staff plans to initially conduct a desk audit to review the documentation provided on the portal. The online reference portal would allow the NRC staff to audit basis documents to determine whether the information included in the documents is necessary to reach a safety conclusion on the application. Documents identified as necessary for analysis of the application will be identified by the NRC staff. The licensee will be formally requested to submit those documents on the NRC docket. Use of the online reference portal is acceptable, as long as the following conditions are met:

- The online reference portal will be password-protected and passwords will be assigned to those directly involved in the review on a need-to-know basis;

- The online reference portal will be sufficiently secure to prevent staff from printing, saving, or downloading any documents; and

- Conditions of use of the online reference portal will be displayed on the login screen and will require concurrence by each user.

The NRC staff would like to request that the portal be populated with the documents listed in the enclosure to this letter. This is the initial list identified by the NRC staff. The NRC staff may request additional documents during the review, which will be transmitted to you via e-mail. This will help with the preparation for a virtual audit. Please provide NRC staff access to the portal and send me the information needed to access the portal, such as username and password, as soon as possible. The conditions associated with the online reference portal must be maintained throughout the duration of the review process. Please provide written confirmation that EHNC agrees to the terms and conditions set forth in this letter.

If you have any questions, please contact me at (301) 415-2855, or by e-mail at Scott.Wall@nrc.gov.

Sincerely,

/RA/

Scott P. Wall, Senior Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-440

Enclosure:
Audit Plan

cc: Listserv

REGULATORY AUDIT PLAN

TO SUPPORT REVIEW OF LICENSE AMENDMENT REQUEST

TO REVISE THE FLOOD HAZARD PROTECTION SCHEME

ENERGY HARBOR NUCLEAR CORP.

ENERGY HARBOR NUCLEAR GENERATION, LLC

PERRY NUCLEAR POWER PLANT, UNIT NO. 1

DOCKET NO. 50-440

1.0 BACKGROUND

By letter dated April 7, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21106A027), Energy Harbor Nuclear Corp (EHNC, the licensee) submitted license amendment requests for Perry Nuclear Power Plant (PNPP), to revise the Updated Safety Analysis Report (USAR) to change the methodology used for analysis of flooding hazards and drainage within the local intense precipitation (LIP) domain and reflect the results from the new analysis. Based on the new analysis a new flood hazard protection scheme is also proposed for PNPP. In addition, in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.12, EHNC requests exemptions to credit non-safety related protection features including (1) permanent (passive) and temporary (deployable), as flood barriers, and (2) the plant storm drain system in mitigation of flood levels during a LIP event.

The U.S. Nuclear Regulatory Commission (NRC) staff has determined the need for a regulatory audit to be conducted in accordance with Office of Nuclear Reactor Regulation Office Instruction LIC-111, Revision 1, "Regulatory Audits" (ADAMS Accession No. ML19226A274), for the NRC staff to examine the licensee's non-docketed information with the intent to gain a better understanding of the license amendment request (LAR), to verify information, and to identify information that may require docketing to support the basis of the NRC staff's licensing decision.

2.0 REGULATORY AUDIT BASIS

A regulatory audit is a planned license or regulation-related activity that includes the examination and evaluation of primarily non-docketed information. The audit is conducted with docketing to support the basis of a licensing or regulatory decision. Performing a regulatory audit is expected to assist the NRC staff in efficiently conducting its review of the LAR and to gain insights of the licensee's processes and procedures. Information that the NRC staff relies upon to make the safety determination must be submitted on the docket.

The basis of this remote audit is the licensee's LAR for PNPP and NUREG-0800, Revision 3, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP) (ADAMS Accession No. ML070660036).

An audit was determined to be the most efficient approach toward a timely resolution of issues associated with this LAR review, since the NRC staff will have an opportunity to minimize the

potential for multiple rounds of requests for additional information (RAIs) and ensure no unnecessary burden will be imposed by requiring the licensee to address issues that are no longer necessary to make a safety determination.

3.0 REGULATORY AUDIT SCOPE OR METHOD

The audit team will review the licensee's analyses and calculations supporting the USAR changes related to the methodology used for analysis of flooding hazards and drainage within the LIP domain. The audit team will use this review to determine if the licensee needs to submit any additional information contained in the analyses and calculations performed in support of the requested change to support or develop conclusions for the NRC staff's safety evaluation.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE AUDIT

The NRC audit team will require access to licensee personnel knowledgeable of the technical aspects of the LAR and the documentation and procedures used to support the LAR.

The NRC staff requests that the licensee have the following information readily available and accessible for the NRC staff's review via an internet-based portal:

I. Executable electronic versions of the input and output files for key scenarios and final selected ones used in the LAR to simulate (i) FLO-2D LIP flooding, and (ii) inflows and streams course models for the two streams "Major" and "Diversion". Note: these files should be submitted for docketing.

II. The following calculation documents cited in the LAR Enclosure A, "Evaluation of Proposed Change":
   a. Calculation 50:87.000, "PNPP Local Intense Precipitation Study Calculation,"
   b. Reference 66, PNPP Calculation 50:64.000, "PNPP Site Modifications Local Intense Precipitation (Design Basis)"
   c. Reference 67, PNPP Calculation 50:65.000, "Evaluation of Structural Roof Capacity for USAR Described PMP Event"
   d. Reference 68, PNPP Calculation 50:71.000, "Design Basis Probable Maximum Precipitation (PMP) Determination"
   e. Reference 69, PNPP Calculation 50:79.000, "Probable Maximum Winter Precipitation (PMWP, Cool-Season PMP) and Snowmelt Contribution (Design Basis)"
   f. Reference 70, PNPP Calculation 50:72.000, "Design Basis Major Stream Probable Maximum Flood (PMF)"
   g. Reference 71, PNPP Calculation 50:73.000, "Design Basis Diversion Stream Probable Maximum Flood (PMF)"
   h. Reference 72, PNPP Calculation 50:75.000, "Design Basis Standard Project Storm (SPS) Determination"
   i. Reference 73, PNPP Calculation 21:02.000, "Misc. Yard Structures – Railroad Bridge"
   j. Reference 74, PNPP Procedure EMARP-0005, "Monitoring of Shoreline Recession and Bluff Erosion"
   k. Reference 75, PNPP Engineering Change Package 13-0802, "Major/Minor Stream Modification"
   l. Reference 76, PNPP Calculation 50:68.000, "Perry Nuclear Power Plant (PNPP) Diversion Stream Design Basis Shore Protection Analysis"

m. Reference 77, PNPP Drawing 744-0177-00012, “Stream Relocation Outfall profile – Stream Outfall”
n. Reference 78, PNPP Calculation 50:80.000, “Effects of Cool-Season Probable Maximum Winter Precipitation (PMWP) Event”
o. Reference 79, PNPP Calculation 50:77.000, “Evaluation of Flood Barriers”
p. PNPP Calculation 50:85.000, “Precipitation Hazard Alert Evaluation.”
q. Reference 82, PNPP Calculation 50:76.000, “PNPP Design Basis Standard Project Storm (SPS) Rainfall Effects”
r. Reference 86, PNPP Calculation 50:82.000, “ESW Swale Discharge Flooding Evaluation”
s. Reference 87, PNPP Calculation 50:83.000, “Mixed Bed Tank Discharge Evaluation”
t. Reference 89, PNPP Calculation 50:85.000, “Precipitation Hazard Alert Evaluation.”

Based on the review of the above documents, the NRC staff will determine whether it needs to request any additional documents to be made available on the portal or whether additional information needs to be submitted on the docket for the staff to complete the review of the requested changes.

5.0 AUDIT TEAM

The following are members of the NRC audit team:

- Scott Wall, Senior Project Manager, (Scott.Wall@nrc.gov)
- Kenneth See, Senior Hydrologist, (Kenneth.See@nrc.gov)
- Hosung Ahn, Hydrologist, (Hosung.Ahn@nrc.gov)
- Brian Lee, Safety and Plant Systems Engineer, (Brian.Lee@nrc.gov)
- Raul Hernandez, Safety and Plant Systems Engineer, (Raul.Hernandez@nrc.gov)
- Bryce Lehman, Structural Engineer, (Bryce.Lehman@nrc.gov)
- Juan Lopez, Civil Engineer, (Juan.Lopez@nrc.gov)
- Aaron Armstrong, Reactor Ops Engineer, (Aaron.Armstrong@nrc.gov)

6.0 LOGISTICS

The audit will be conducted from July 26, 2021, to November 1, 2021, through an online portal (also known as electronic portal, ePortal, electronic reading room) established by EHNC.

If requested, the audit team will conduct a telephone conference with the licensee for the purposes of introducing the team, discussing the scope of the audit, and describing the information to be made available on the internet portal. The audit team will also confirm with the licensee if the information made available on the online portal contains any sensitive or proprietary information. The audit team may request that representatives of EHNC answer audit team questions during the audit related to information provided on the portal at a mutually agreeable day and time by telephone conference.

The NRC staff does not foresee the need for an onsite visit or in-person discussions between the NRC and licensee staff to discuss information to be provided on the portal at this time. However, if the need for a such a meeting is identified in the future, the audit plan will be revised, and the schedule for the audit will be adjusted accordingly. The NRC project manager will coordinate any changes to the audit schedule and location with the licensee.

7.0 SPECIAL REQUESTS

The NRC audit team will not require any special requests.

8.0 DELIVERABLES

An audit summary will be prepared within 90 days of the completion of the audit. If the NRC staff identifies information during the audit that is needed to support its regulatory decision, the staff will issue RAIs to the licensee.

SUBJECT: PERRY NUCLEAR POWER PLANT, UNIT NO. 1 – REGULATORY AUDIT FOR THE REVIEW OF LICENSE AMENDMENT REGARDING REVISING THE FLOOD HAZARD PROTECTION SCHEME (EPID L-2021-LLA-0067) DATED JULY 9, 2021

DISTRIBUTION:
PUBLIC
RidsNrrPMPerry Resource
RidsACRS_MailCTR Resource
RidsRgn3MailCenter Resource
RidsNrrLASRohrer Resource
RidsRgn3MailCenter Resource
RidsNrrDssScpb Resource
RidsNrrDexEseb Resource
RidsNrrDexExhb Resource
RidsNrrDroIqvb Resource
KSee, NRR
HAhn, NRR
BLee, NRR
RHernandez, NRR
BLehman, NRR
JLopez, NRR
AArmstrong, NRR

Accession No.: ML21165A001

OFFICE	NRR/DORL/LPL3/PM	NRR/DORL/LPL3/LA	NRR/DEX/ESEB/BC
NAME	SWall	SRohrer	JColaccino
DATE	06/30/2021	06/15/2021	06/302021
OFFICE	NRR/DEX/EXHB/BC	NRR/DRO/IQVB/BC	NRR/DSS/SCPB/BC
NAME	BHayes	KKavanagh	BWittick
DATE	07/06/2021	06/302021	07/08/2021
OFFICE	NRR/DORL/LPL3/BC	NRR/DORL/LPL3/PM	
NAME	NSalgado (JWiebe for)	SWall	
DATE	07/09/2021	07/09/2021	

OFFICIAL RECORD COPY