

## **NRR-PMDAPEm Resource**

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**From:** Green, Kimberly  
**Sent:** Thursday, September 01, 2016 8:04 AM  
**To:** Lashley, Phil H. (phlashley@firstenergycorp.com)  
**Cc:** Forsaty, Fred  
**Subject:** Audit Plan Related to Perry License Amendment Request for Upper Containment Pool (UCP) Gate Installation in MODES 1, 2, and 3, and Drain Down of the Reactor Cavity Portion of the UCP in MODE 3  
**Attachments:** Final Audit Plan.docx

Dear Mr. Lashley:

This is to inform you that the U.S. Nuclear Regulatory Commission (NRC) staff plans to perform a regulatory audit of FirstEnergy Nuclear Operating Company's (FENOC) supporting documents and calculations related to the license amendment request for Perry Nuclear Power Plant, Unit 1 to allow upper containment pool gate installation during MODES 1, 2, and 3 and drain-down of the reactor cavity portion of the upper containment pool in MODE 3. This technical audit will be performed consistent with NRC Office of Nuclear Reactor Regulation, Office Instruction LIC-111, "Regulatory Audits," dated December 29, 2008 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML082900195). The audit will be conducted during the week of September 6, 2016, with discussions via teleconference with FENOC staff as needed. The NRC staff will develop an audit summary report to document its observations and conclusions within 30 days of the conclusion of the audit.

The audit will provide the NRC staff with a better understanding of the detailed calculations, analyses and bases underlying the license amendment request (LAR) regarding the upper containment pool gate installation and drain-down of the upper containment pool, which was submitted on March 15, 2016 (ADAMS Accession No. ML16075A411). Specifically, the audit will provide the NRC staff with a better understanding of the GOTHIC analyses conducted to model the containment response during design basis accidents for the proposed configuration presented in the LAR. The audit is intended to support the completion of the staff's review of the LAR and identify any additional information that may be necessary for the staff to reach a licensing decision.

The attached audit plan identifies the scope of the audit and the information to which NRC staff requests access. The list of documents was previously discussed with you and other FENOC staff during a call on August 30, 2016.

If you have any questions, please call or email me.

Sincerely,  
Kimberly Green  
(301) 415-1627  
[kimberly.green@nrc.gov](mailto:kimberly.green@nrc.gov)

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**From:** Green, Kimberly

**Created By:** Kimberly.Green@nrc.gov

**Recipients:**

"Forsaty, Fred" <Fred.Forsaty@nrc.gov>

Tracking Status: None

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Tracking Status: None

**Post Office:**

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## AUDIT PLAN

### FIRSTENERGY NUCLEAR OPERATING COMPANY

#### PERRY NUCLEAR POWER PLANT, UNIT NO. 1

#### DOCKET NO. 50-440

### **BACKGROUND**

By letter dated March 15, 2016 (ADAMS Accession No. ML16075A411), FirstEnergy Nuclear Operating Company (FENOC) submitted a license amendment request (LAR) for the Perry Nuclear Power Plant, Unit 1 (PNPP). The proposed LAR revises the PNPP Technical Specifications (TS) for upper containment pool (UCP) gate installation in MODES 1, 2, and 3, and drain-down of reactor cavity portion of the UCP in MODE 3.

### **REGULATORY AUDIT SCOPE**

The U. S. Nuclear Regulatory Commission (NRC) staff will focus on the following topics during this audit:

- Safety analyses related to the proposed change:
  - Post-Accident vent coverage
  - Hydrodynamic loads
  - Emergency core cooling system net positive suction head requirements
  - Long term heat sink
- Input assumptions used in the GOTHIC code calculations for the LAR
- Comparison of the analysis of record (method and results) and the analysis used in the LAR
- The band on operator action for Level 8
- Original assumptions for sizing of the upper containment pool, specifically break size and location
- Design Basis limits that will be exceeded without UCP inventory

### **INFORMATION REQUEST**

The staff requests access to the following documents:

- Input assumptions used in the GOTHIC code calculations for this LAR
- GOTHIC model benchmarking for PNPP
- Containment pressure response during a steam bypass event in MODE 3 drain down
- Calculations related to applicable design basis LOCA(s) related to this LAR
- Calculation for reactor vessel liquid level uncertainty for PNPP (i.e., level trip calculations)
- Calculations for suppression pool Low and High water levels (LWL/HWL)
- Calculations for Drywell free volume, Entrapment volume, and Holdup volume
- Volume of flooded steam lines

- Volume used, and credited in calculations for equipment in drywell
- Calculation for drywell bypass capability
- Heat sink calculation (i.e., heat sink structural surface areas)
- PNPP EOP requirements related to this LAR

**NRC REVIEW ASSIGNMENTS**

Kimberly, Green, DORL/LPL III-1, Project Manager  
Fred M. Forsaty, DSS/SRXB, Lead Reviewer

**LOGISTICS**

Proposed regulatory audit dates: The week of September 6, 2016

Proposed regulatory audit location: Remote access via Sciencetech eDocs portal

**DELIVERABLES**

A regulatory audit summary will be provided within 30 days of the completion of the audit.