



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

April 5, 2023

Mr. David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

**SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 – REGULATORY
AUDIT REPORT REGARDING LICENSE AMENDMENT REQUEST TO
TRANSITION TO GNF3 FUEL (EPID L-2022-LLA-0121)**

Dear Mr. Rhoades:

By letter dated August 18, 2022 (Agencywide Documents Access Management System Accession No. ML22230C927), as supplemented by letter dated January 23, 2023 (ADAMS Accession No. ML23023A128), Constellation Energy Generation, LLC (the licensee) submitted a request for review and approval a license amendment request (LAR) for Dresden Nuclear Power Station, Units 2 and 3 (DNPS), focused on the transition to Global Nuclear Fuel, GNF3 fuel.

The U.S. Nuclear Regulatory Commission's (NRC's) Office of Nuclear Reactor Regulation staff conducted an audit of the information related to environmental qualification (EQ) of relevant electrical equipment to support its review of the amendment request. The audit plan is available in ADAMS at Accession No. ML22335A565.

The audit was conducted virtually through conference calls and the use of an online portal from January 3, 2023, to March 3, 2023. The NRC staff held teleconferences on February 3, 2023, and February 28, 2023, with the licensee's staff to discuss the EQ documents uploaded on the portal.

The purpose of the audit was to gain understanding, to verify information, and to identify information that will require docketing to support the proposed licensing action. The enclosure to this letter provides the report of the NRC staff's audit.

If you have any questions, please contact me by telephone at (301) 415 1421 or by email at Surinder.Arora@nrc.gov.

Sincerely,

/RA/

Surinder S. Arora, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-237 and 50-249

Enclosure:
Audit Report

cc: Listserv



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

REGULATORY AUDIT REPORT TO SUPPORT THE
REVIEW OF ENVIRONMENTAL QUALIFICATION OF
ELECTRICAL EQUIPMENT RELATED TO THE LICENSE
AMENDMENT REQUEST
REGARDING TRANSITION TO GNF3 FUEL
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
DOCKET NOS. 50-237 AND 50-249

1.0 BACKGROUND

By letter dated August 18, 2022 (Agencywide Documents Access Management System (ADAMS) Accession No. ML22230C927), as supplemented by letter dated January 23, 2023 (ADAMS Accession No. ML23023A128), Constellation Energy Generation, LLC (the licensee) submitted a license amendment request (LAR) for Dresden Nuclear Power Station, Units 2 and 3 (DNPS), focused on the transition to Global Nuclear Fuel, GNF3 fuel. Part of the LAR included information related to environmental qualification (EQ) of electrical equipment. The U.S. Nuclear Regulatory Commission (NRC) staff conducted a regulatory audit in accordance with the Office of Nuclear Reactor Regulation Office Instruction LIC-111, "Regulatory Audits" (ADAMS Accession No. ML082900195). LIC-111 states that a regulatory audit is a planned, licensed or regulation-related activity that includes the examination of primarily non-docketed information with the intent to gain understanding, to verify information, or to identify information that will require docketing to support the basis of the licensing or regulatory decision. The audit plan for this audit is dated December 14, 2022, and can be found in ADAMS (Accession No. ML22335A565).

2.0 SCOPE AND PURPOSE

The audit was held on January 3, 2023, to March 3, 2023. The purpose of the audit was to help the NRC staff better understand the licensee's EQ documentation and analyses through interaction with the licensee's staff and to help focus the NRC staff's requests for additional information on those questions where docketed information is needed to complete the review.

3.0 AUDIT TEAM

The following NRC staff members participated in the audit:

- Surinder Arora, Project Manager
- Matthew McConnell, Senior Electrical Engineer
- Kayleh Hartage, Electrical Engineer

Enclosure

4.0 AUDIT SUMMARY

Technical discussions focused on EQ of electrical equipment as a result of the proposed change in nuclear fuel design. During the audit, the NRC staff discussed questions associated with the LAR.

NRC staff audited this information to better understand how the licensee evaluated the potential effects of the proposed changes on the EQ of electrical equipment because of the proposed transition to GNF3 fuel. During the audit, the staff verified key assumptions and reviewed the licensee's technical analyses used to support the basis for the LAR. In Section 3.4.2 of the LAR, the licensee stated that the change in core inventory has no impact on existing normal or post-accident temperature, pressure, or humidity. The licensee further noted that it has reviewed the effects of the revised total integrated dose (TID), which is inclusive of the normal and accident dose with margin. Specifically, for the electrical equipment affected, the NRC staff reviewed the assumptions and analyses as well as supporting documents to verify that the required EQ of electrical equipment remains qualified because of the proposed change in nuclear fuel design. During the audit, the NRC staff reviewed the licensee's EQ evaluation of the electrical equipment impacted by the proposed changes for the TID. The NRC staff observed that qualification of some equipment was not affected by the proposed changes. For other equipment, the licensee utilized analysis to demonstrate that the equipment would remain qualified. The NRC staff reviewed the licensee's documents listed below.

5.0 DOCUMENTS REVIEWED

The following documents were reviewed by the NRC staff during the audit:

EQ of electrical equipment:

Document Identifier	Title/Description
EQ-40D	Solenoid Valve Assembly–AVCO/6910-020
EQ-54D	Connector–Bendix Cable Connector MS-3102R-12S-3P and Plug MS-3106R-12S-3S
EQ-71D PT 1	Siemens-Allis Motors–CQD-049115 Rev. 00
EQ-71D PT 2	Equipment Qualification Report Electric Motors CWE-2713R Rev. 0
EQ-71D PT 3	Appendix IV Seismic Test Report Wyle Laboratories 41147-1
EQ-71D PT 4	Appendix IV Seismic Test Report Wyle Laboratories 41147-1 (Cont.)
EQ-80D	Pressure Switch–Barksdale B2T–M125SS Rev. 03
EQ-83D	Differential Pressure Indicating Switch– Barton/288 Rev. 04
EQ-84D	Pressure Switch–Static-O-Ring/56NN– AA216 Rev. 02B

Document Identifier	Title/Description
EQ-86D	MOC Switch–Golden Gate (Circuit Breaker System)/04B001 Rev. 04
Engineering Change 000063907, Rev. 000 20220703, GNF3 FUEL CHANGE- EQ Review	EQ 2022–GNF3 Fuel Change–EQ Review
006N6473 Rev. 0, Engineering Change 629262, Rev. 0	Quad Cities Nuclear Power Station Units 1 and 2 Long-Term Containment Analyses for DBA LOCA NPSH and Small Steam Line Break for EQ [analysis was edited to represent DNPS]
General	Response to Questions Discussed During February 3, 2023, teleconference between licensee and NRC
General	Response to Questions Discussed During February 28, 2023, teleconference between licensee and NRC
Roadmap of EC636907 Appendix A	Uploaded February 10, 2023

6.0 AUDIT CONCLUSION

There were no regulatory decisions made during the audit. There were no open items needing further clarification and no deviation from the audit plan.

Date: April 5, 2023

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3 – REGULATORY
AUDIT REPORT REGARDING LICENSE AMENDMENT REQUEST TO
TRANSITION TO GNF3 FUEL (EPID L-2022-LLA-0121) DATED APRIL 5, 2023

DISTRIBUTION:

PUBLIC

PM File Copy

RidsACRS_MailCTR Resource

RidsNrrDorLpl3 Resource

RidsNrrLASRohrer Resource

RidsNrrPMDresden Resource

RidsRgn3MailCenter Resource

RidsNrrDexEltb Resource

MMcConnell, NRR

KHartage, NRR

ADAMS Accession No. ML23088A224

OFFICE	NRR/DORL/LPL3/PM	NRR/DORL/LPL3/LA	NRR/DEX/ELTB/BC
NAME	SArora	SRohrer	JPaige
DATE	3/30/2023	3/30/2023	4/4/2023
OFFICE	NRR/DORL/LPL3/BC	NRR/DORL/LPL3/PM	
NAME	VSreenivas	SArora	
DATE	4/5/2023	4/5/2023	

OFFICIAL RECORD COPY