



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

December 20, 2021

Mr. David P. Rhoades  
Senior Vice President  
Exelon Generation Company, LLC  
President and Chief Nuclear Officer (CNO)  
Exelon Nuclear  
4300 Winfield Road  
Warrenville, IL 6055

SUBJECT: QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2 – AUDIT PLAN TO SUPPORT THE REVIEW OF NEDC-33930P, REVISION 0, GEXL98 CORRELATION FOR ATRIUM 10XM FUEL INCLUDED IN THE LICENSE AMENDMENT REQUEST REGARDING TRANSITION TO GNF3 FUEL (EPID L-2021-LLA-0159)

Dear Mr. Rhoades:

By application dated September 14, 2021 (Agencywide Document Access and Management System (ADAMS) Accession No. ML21257A419), as supplemented by letter dated November 3, 2021 (ADAMS Accession No. ML21307A444), Exelon Generation Company, LLC (EGC, or the licensee) submitted a license amendment request (LAR) with a proposed change that supports the transition from Framatome ATRIUM 10XM fuel to GNF3 [Global Nuclear Fuel] fuel at Quad Cities Nuclear Power Station, Units 1 and 2. The proposed change includes revising Technical Specifications 5.6.5, "Core Operating Limits Report [COLR]," paragraph b, to add a report that supports the General Electric Standard Application for Reactor Fuel analysis methodology to the list of approved methods to be used in determining the core operating limits in the COLR. The licensee also plans to utilize Framatome RODEX2A methodology with an additional thermal conductivity degradation penalty in mixed core thermal-mechanical calculations. Additionally, in support of the proposed transition to GNF3 fuel, EGC proposes to revise the alternative source term loss-of-coolant accident analysis to use a bounding core inventory.

Part of the LAR included the review and approval of the topical report NEDC-33930P, Revision 0, "GEXL98 Correlation for ATRIUM 10XM Fuel [NEDC-33930P]." Due to the complex nature of this material, the U.S. Nuclear Regulatory Commission (NRC) staff has decided to conduct an audit for understanding as a tool early in the process to complete the overall review more effectively and efficiently. The NRC staff will conduct a regulatory audit to support its review in accordance with the enclosed audit plan. A regulatory audit is a planned activity that includes the examination and evaluation of primarily non-docketed information.

The audit will be conducted to increase the NRC staff's understanding of the NEDC-33930P topical, and to identify information that will require docketing to support the NRC staff's regulatory findings. The audit will be conducted from January 18, 2022, through January 20, 2022, primarily in a virtual discussion format, with use of an online portal (also known as

electronic portal, ePortal, electronic reading room) established by EGC, if needed. The enclosed audit plan was discussed with your staff on December 6, 2021.

If you have any questions, please contact me at 301-415-2934 or at [Booma.Venkataraman@nrc.gov](mailto:Booma.Venkataraman@nrc.gov).

Sincerely,

*/RA/*

Booma Venkataraman, Project Manager  
Plant Licensing Branch III  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-254, 50-265

Enclosure:  
Audit Plan

cc: Listserv



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REGULATORY AUDIT PLAN

TO SUPPORT REVIEW OF NEDC-33930P, REVISION 0

GEXL98 CORRELATION FOR ATRIUM 10XM FUEL IN THE LICENSE AMENDMENT

REQUEST REGARDING TRANSITION TO GNF3 FUEL

QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2

DOCKET NO. 50-254 AND 50-265

1.0 BACKGROUND

By letter dated September 14, 2021 (Agencywide Documents Access Management System Accession No. ML21257A420), as supplemented by letter dated November 3, 2021 (ADAMS Accession No. ML21307A444), Exelon Generation Company, LLC (EGC) submitted a request for review and approval a license amendment for Quad Cities Nuclear Power Station, Units 1 and 2, focused on the transition to GNF3 [Global Nuclear Fuel] fuel. Part of that amendment included in the review and approval of the topical report NEDC-33930P, Revision 0, "GEXL98 Correlation for ATRIUM 10XM Fuel [NEDC-33930P]." Due to the complex nature of this material, the U.S. Nuclear Regulatory Commission (NRC) staff has decided to conduct an audit for understanding under the Office of Nuclear Reactor Regulation guidance LIC-500, "Topical Report Process," and LIC-111, "Regulatory Audits."

2.0 REGULATORY AUDIT BASIS

This is a request for an audit for understanding. Audits for understanding are a tool that the NRC staff has used early in the review process to more effectively and efficiently understand the material which has been submitted for review. While they are an optional tool, they have been found to greatly reduce the number of requests for additional information (RAIs) and total number of hours necessary in performing the review and are generally seen by both the NRC staff and the licensee as a large efficiency gain.

3.0 REGULATORY AUDIT SCOPE

The NRC will conduct a 3-day virtual audit for understanding focused on NEDC-33930P.

4.0 INFORMATION AND OTHER MATERIAL NECESSARY FOR THE REGULATORY AUDIT

The NRC staff requests that Exelon make available the appropriate engineer(s) with expertise in NEDC-33930P, Revision 0, "GEXL98 Correlation for ATRIUM 10XM Fuel," and who can

address questions by the NRC staff. The engineer(s) will also make available to the NRC staff, any references deemed appropriate.

## 5.0 TEAM AND REVIEW ASSIGNMENTS

The regulatory audit will be held virtually. The audit team will consist of the following NRC staff:

- Booma Venkataraman, Project Manager
- Joshua Kaizer, Reactor Systems Engineer
- Noushin Amini, Reactor Systems Engineer

## 6.0 LOGISTICS

The audit will be conducted from January 18, 2022, through January 20, 2022.

EGC should provide the necessary documents and relevant licensee staff who can discuss the issue.

The audit will primarily be a discussion using a virtual platform (e.g., Microsoft Teams) for the purposes of gaining a clear understanding of the submitted report. This includes answering comprehension questions by the licensee.

If any additional information is submitted to the electronic reading room, the audit team will confirm with the licensee that the information made available on the online portal contains any sensitive or proprietary information. The audit team may request that representatives of EGC answer audit team questions during the audit related to information provided on the portal at a mutually agreeable day and time by telephone or Microsoft Teams conference.

The NRC project manager will coordinate any changes to the audit schedule with the licensee.

## 7.0 SPECIAL REQUESTS

The audit team would like access to documents if needed through an online portal (also known as eDocs, electronic reading room, ePortal) that allows the audit team to access documents via the internet. The following conditions associated with the online portal must be maintained throughout the duration that the audit team has access to the online portal:

- The online portal will be password-protected, and separate passwords will be assigned to the NRC staff who are participating in the audit.
- The online portal will be sufficiently secure to prevent the NRC staff from printing, saving, downloading, or collecting any information on the online portal.
- Conditions of use of the online portal will be displayed on the login screen and will require acknowledgement by each user.

User name and password information should be provided directly to the NRC staff. The NRC project manager will provide EGC any additional names and contact information of the NRC staff if needed. All other communications should be coordinated through the NRC project manager.

## 8.0 DELIVERABLES

An audit summary, which may be made public, will be provided within 90 days of the completion of the audit.

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 JKaizer, NRR  
 NAmini, NRR

**ADAMS Accession No.: ML21347A001**

\*by e-mail

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