



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

October 1, 2021

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

SUBJECT: LIMERICK GENERATING STATION UNITS 1 AND 2– AUDIT PLAN IN SUPPORT OF REVIEW OF LICENSE AMENDMENT REQUEST TO IMPLEMENT AN ALTERNATE DEFENSE-IN-DEPTH CATEGORIZATION PROCESS, AN ALTERNATE PRESSURE BOUNDARY CATEGORIZATION PROCESS, AND AN ALTERNATE SEISMIC TIER 1 CATEGORIZATION PROCESS IN ACCORDANCE WITH THE REQUIREMENTS OF 10 CFR 50.69, “RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS” (EPID L-2021-LLA-0042)

Dear Mr. Rhoades:

By letters dated March 11, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21070A412), and May 5, 2021 (ADAMS Accession No. ML21125A215), Exelon Generation Company (the licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) modify the licensing basis by revising the related license condition in Appendix C to allow the use of an alternate defense in depth categorization process, an alternate pressure boundary categorization process, and an alternate Seismic Tier 1 categorization process for implementation of the risk-informed categorization and treatment of structures, systems and components for the Limerick Generating Station in accordance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.69, “Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors.”

During the initial review of the license amendment request (LAR), the U.S. Nuclear Regulatory Commission (NRC) staff identified several items that require further clarification and detailed explanations. The NRC staff will conduct a regulatory audit to support its review of the LAR 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 LAR and identify information that will require docketing to support the NRC staff’s regulatory finding.

The audit will be conducted using video and teleconferencing and a secure, online portal. The logistics and scope of this audit were discussed with your staff on September 20, 2021. The audit plan is enclosed.

If you have any questions, please contact me by telephone at 301-415-2597 or by e-mail to [V.Sreenivas@nrc.gov](mailto:V.Sreenivas@nrc.gov).

Sincerely,

*/RA/*

V. Sreenivas, Project Manager  
Plant Licensing Branch I  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-352 and 50-353

Enclosure:  
Audit Plan

cc: Listserv



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

REGULATORY AUDIT PLAN

APPLICATION TO IMPLEMENT AN ALTERNATE

DEFENSE IN DEPTH CATEGORIZATION PROCESS,

AN ALTERNATE PRESSURE BOUNDARY CATEGORIZATION PROCESS, AND

AN ALTERNATE SEISMIC TIER 1 CATEGORIZATION PROCESS IN ACCORDANCE WITH

THE REQUIREMENTS OF 10 CFR 50.69, "RISK-INFORMED CATEGORIZATION AND

TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER

REACTORS"

LIMERICK GENERATING STATION UNITS 1 AND 2

I. BACKGROUND

By letters dated March 11, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21070A412), and May 5, 2021 (ADAMS Accession No. ML21125A215), Exelon Generation Company (the licensee) requested that the U.S. Nuclear Regulatory Commission (NRC) modify the licensing basis by revising the related license condition in Appendix C to allow the use of an alternate defense in depth categorization process, an alternate pressure boundary categorization process, and an alternate Seismic Tier 1 categorization process for implementation of the risk-informed categorization and treatment of structures, systems and components for the Limerick Generating Station in accordance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.69, "Risk-Informed Categorization and Treatment of Structures, Systems and Components for Nuclear Power Reactors".

## II. REGULATORY AUDIT BASES

The basis of this regulatory audit is the licensee's license amendment request (LAR) for Limerick Generating Station, Units 1 and 2, noted above, and the Standard Review Plan (SRP) Section 19.2, "Review of Risk Information Used to Support Permanent Plant-Specific Changes to the Licensing Basis: General Guidance" (ADAMS Accession No. ML071700658).

The audit will be performed consistent with NRC Office of Nuclear Reactor Regulation Office Instruction LIC-111, Revision 1 "Regulatory Audits," dated October 31, 2019 (ADAMS Accession No. ML19226A274). An audit was determined to be the most efficient approach toward a timely resolution of issues associated with this LAR review, since the 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 not necessary to make a safety determination.

## III. PURPOSE AND SCOPE

The purpose of the regulatory audit is to gain a more detailed understanding of licensee's process to implement the proposed alternate approaches to risk-informed categorization and treatment of structures, systems and components as proposed in the LAR. The NRC staff will review these alternate approaches with regard to their impact to existing internal and external event models and deviations from the NRC-approved implementation of 10 CFR 50.69.

The areas of focus for the regulatory audit are the information contained in the licensee's submittal, the enclosed audit information needs, and all associated and relevant supporting documentations (e.g., methodology, process information, calculations, etc.). The relevant supporting documents are identified below.

## IV. INFORMATION AND OTHER MATERIAL NECESSARY FOR THE REGULATORY AUDIT

The NRC requests that the licensee make the following documentation, presentations, and discussions available to the audit team during the duration of the audit, noted below:

- Current 10 CFR 50.69 and newly proposed procedures regarding defense in depth and passive component categorizations.
- Documentation depicting the defense-in-depth and passive component categorizations for the 10 pilot systems and any others using both the NEI [Nuclear Energy Institute] 00-04 and the alternate proposed approaches (PWROG-2015-NP [Pressurized-Water Reactor Owners Group] and EPRI [Electric Power Research Institute] 3002015999).
- Any specific changes to the PRA model of record.
- Presentation and walkthrough of proposed new categorization process as defined in the supplemental LAR, PWROG-2015-NP and EPRI 3002015999.
- Limerick Individual Plant Examination of External Events (IPEEE) submittal.

- Any notebooks that document changes to the plant and plant probabilistic risk assessment (PRA) models since the IPEEE was performed that demonstrate additional defense in depth or conservatisms in the seismic core damage frequency (CDF) and seismic large early release frequency estimates.
- Seismic Walkdown Report for Limerick in response to Near Term Task Force Recommendation 2.3.
- Limerick Severe Accident Risk Assessment (SARA) SPRA

#### V. AUDIT TEAM

The members of the audit team currently identified are:

- V. Sreenivas, Project Manager, NRC ([V.Sreenivas@nrc.gov](mailto:V.Sreenivas@nrc.gov))
- Jeff Circle, APLA, NRC ([Jeff.Circle@nrc.gov](mailto:Jeff.Circle@nrc.gov))
- Mihaela Biro, APLA, NRC ([Mihaela.Biro@nrc.gov](mailto:Mihaela.Biro@nrc.gov))
- Alissa Neuhausen, APLC, NRC ([Alissa.Neuhausen@nrc.gov](mailto:Alissa.Neuhausen@nrc.gov))
- Keith Tetter, APLC, NRC ([Keith.Tetter@nrc.gov](mailto:Keith.Tetter@nrc.gov))
- Mark Wilk, Contractor, PNNL ([Mark.Wilk@pnnl.gov](mailto:Mark.Wilk@pnnl.gov))

#### VI. LOGISTICS

The audit will be conducted remotely using video and teleconferencing and a secure, online portal, established by the licensee,(from October 18 to October 20, 2021. The audit kick-off meeting will be held at 10:00 a.m. on October 18, 2021. A detailed audit schedule and topics to be discussed will be provided to the licensee and confirmed prior to the beginning of the audit.

Representatives of Exelon are requested to be available for video or teleconferences on the days and times on the audit schedule below. The NRC project manager will coordinate any changes to the audit schedule and location with the licensee.

Audit Schedule		
Date	Time	Subject
October 18, 2021	9:30 a.m. – 4:00 p.m.	Audit Kick-Off Meeting and Scheduled Discussions
October 19, 2021	9:30 a.m. – 4:00 p.m.	Scheduled Discussions
October 20, 2021	9:30 a.m. – 4:00 p.m.	Scheduled Discussions and Audit Exit Meeting

#### VII. SPECIAL REQUESTS

The NRC staff requests access to the documents listed above in Section IV through a secure, online portal provided by the licensee that will allow the NRC staff and contractors to access documents remotely. NRC staff and contractors' access to the online portal should be terminated January 30, 2022.

The following conditions associated with the online portal must be maintained throughout the duration that the NRC staff and contractors on the audit team have access to the online portal:

- The online portal will be password-protected, and separate passwords will be assigned to the NRC staff and contractors who are on the audit team.
- The online portal will be sufficiently secure to prevent the NRC staff and contractors 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 acknowledgment by each user.

Username and password information should be provided directly to the NRC staff and contractors on the audit team, listed above. The NRC project manager will provide Exelon the names and contact information of any additional NRC staff and contractors who are added to the audit team. All other communications should be coordinated with the NRC project manager.

No information accessed by the audit team members will be retained by the NRC following the conclusion of the audit.

#### VIII. DELIVERABLES

An audit summary, which may be public, will be prepared within 60 days of the completion of the site 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 after the completion of the audit.

SUBJECT: LIMERICK GENERATING STATION UNITS 1 AND 2– AUDIT PLAN IN SUPPORT OF REVIEW OF LICENSE AMENDMENT REQUEST TO IMPLEMENT AN ALTERNATE DEFENSE-IN-DEPTH CATEGORIZATION PROCESS, AN ALTERNATE PRESSURE BOUNDARY CATEGORIZATION PROCESS, AND AN ALTERNATE SEISMIC TIER 1 CATEGORIZATION PROCESS IN ACCORDANCE WITH THE REQUIREMENTS OF 10 CFR 50.69, "RISK-INFORMED CATEGORIZATION AND TREATMENT OF STRUCTURES, SYSTEMS AND COMPONENTS FOR NUCLEAR POWER REACTORS" (EPID L-2021-LLA-0042) DATED OCTOBER 1, 2021

**DISTRIBUTION:**

PUBLIC

PM File Copy

RidsNrrDorlLpl1

RidsRgn1MailCenter

RidsACRS\_MailCTR

RidsNrrPMLimerick

RidsNrrLAKZeletznock

RidsNrrDexEeeb

RidsNrrDraApla

AMcCraw, OEDO

**ADAMS Accession No.: ML21263A248**

OFFICE	NRR/DORL/LPL1/PM	NRR/DORL/LPL1/LA	NRR/DRA/APLA/BC
NAME	VSreenivas	KEntz	RPascarelli
DATE	9/20/2021	9/23/2021	9/28/2021
OFFICE	NRR/DORL/LPL1/BC	NRR/DORL/LPL1/PM	
NAME	JDanna	VSreenivas	
DATE	10/01/2021	10/01/2021	

**OFFICIAL RECORD COPY**