

From: [Lee, Samson](#)
To: [Loomis, Thomas R:\(Exelon Nuclear\)](#)
Subject: FitzPatrick request for additional information: License Amendment Request for Application of the Alternative Source Term for Calculating Loss-of-Coolant Accident Dose Consequences (EPID: L-2019-LLA-0171 and L-2019-LLA-0020)
Date: Thursday, December 19, 2019 7:36:00 AM

By letter dated August 8, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19220A043), Exelon Generation Company, LLC (Exelon, the licensee), submitted a license amendment request (LAR) for adopting the Alternative Source Term (AST), in accordance with 10 CFR 50.67, for use in calculating the Loss-of-Coolant Accident (LOCA) dose consequences at the James A. FitzPatrick Nuclear Power Plant. The NRC staff has reviewed the LAR and determined that additional information is required to complete the review. The NRC staff's requests for additional information (RAIs) are listed below. These RAIs are in the electrical engineering and environmental review areas. The staff may have additional RAIs in other review areas. The Exelon staff indicated that a clarification call is not necessary and there was no proprietary or sensitive information. The Exelon staff requested, and NRC agreed, to a RAI response by January 21, 2020.

The NRC staff considers that timely responses to RAIs help ensure sufficient time is available for staff review and contribute toward the NRC's goal of efficient and effective use of staff resources. Please note that if you do not respond to this request by the agreed-upon date or provide an acceptable alternate date, we may deny your application for amendment under the provisions of Title 10 of the *Code of Federal Regulations*, Section 2.108. If circumstances result in the need to revise the agreed upon response date, please contact me at (301) 415-3168 or via e-mail Samson.Lee@nrc.gov.

Electrical Engineering

Regulatory Criteria:

10 CFR 50.49 (e)(1) requires that the time-dependent temperature and pressure at the location of the electric equipment important to safety must be established for the most severe design basis accident during and following which this equipment is required to remain functional.

10 CFR 50.49 (e)(2) requires that humidity during design basis accidents must be considered.

10 CFR 50.49 (e)(4) requires that the radiation environment must be based on the type of radiation, the total dose expected during normal operation over the installed life of the equipment, and the radiation environment associated with the most severe design basis accident during or following which the equipment is required to remain functional.

10 CFR 50.49(b)(2) requires qualification of nonsafety-related electric equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishment of safety functions specified in subparagraphs (b)(1) (i) (A) through (C) of paragraph (b)(1) of 10 CFR 50.49 by the safety-related equipment.

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Issue:

Exelon provided an evaluation of the radiological impact on the environmental qualification of electrical equipment due to the proposed increased leakage rate of Main Steam Isolation Valve (MSIVs). Previously, the MSIV leakage pathway was not considered because the Main Steam Leakage Collection (MSLC) system would direct any MSIV leakage to the Standby Gas Treatment System (SGTS). The new release pathway for the MSIV leakage is the Turbine Building. However, the licensee did not provide an evaluation of the impact of the MSIV increased leakage rate on temperature, pressure, or humidity of electrical equipment in the Turbine Building. Additionally, it is unclear as to whether the licensee considered the impact of the proposed change on non-safety related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishments of safety functions by the safety-related equipment.

Request:

RAI-EENB-1

Provide an evaluation that shows that the temperatures, pressures, and humidity remain bounded by the existing environmental qualification for equipment and components in the Turbine Building that are impacted by the proposed change.

RAI-EENB-2

Explain how the licensee has assessed the impact of the proposed change on non-safety related equipment whose failure under postulated environmental conditions could prevent satisfactory accomplishments of safety functions by the safety-related equipment.

RAI-EENB-3

Confirm whether any components are being added to the Environmental Qualification (EQ) equipment list to comply with 10 CFR 50.49 due to the proposed change. If components are being added, describe the equipment qualification for the environmental conditions the components are expected to be exposed to.

Environmental Review

RAI-MENB-1

Part of Exelon's application requests exemptions from the requirements of 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B. These exemptions would allow exclusion of the Main Steam Isolation Valve (MSIV) leakage from the overall integrated leakage rate measured when performing Type A, B, and C Tests. As an alternative to the proposed action, the NRC considered what would be required to comply with the existing provisions in 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B. To comply with those provisions, the alternative would involve work within a radiation area to refurbish the MSIVs to meet the current MSIV leakage rate limits. While the application does state that personnel radiation exposure would occur with refurbishment of the MSIVs, the application does not give an estimate of those resultant radiological doses. Please provide the personnel radiological dose estimates, and a discussion of the operational experience of incurred personnel doses, for refurbishing the MSIVs to comply with the requirements of 10 CFR 50, Appendix J, Option B, Paragraphs III.A and III.B.