

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

May 21, 2021

# MEMORANDUM TO: File

FROM: Michael L. Marshall, Jr., Senior Project Manager /**RA**/ Plant Licensing Branch I Division of Operating Reactor Licensing Office of Nuclear Reactor Regulation

SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – DRAFT REQUEST FOR ADDITIONAL INFORMATION RELATED TO RELIEF REQUEST CISI-03-01 CONCERNING CONTAINMENT UNBONDED POST-TENSIONING SYSTEM INSERVICE INSPECTION REQUIREMENTS (EPID L-2020-LLR-0135)

By letter dated October 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20280A508), Exelon Generation Company, LLC (Exelon, the licensee) submitted a relief request associated with the third containment inservice inspection interval for the Calvert Cliffs Nuclear Power Plant, Units 1 and 2. Exelon's proposed alternatives from the following applicable American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Subsection IWL requirements:

- Accept the dates used during the first containment in-service inspection interval (September 9, 2001, for Unit 1 and September 9, 2002, for Unit 2) to establish scheduling for future examinations in accordance with IWL-2421.
- Extend the interval between post-tensioning system examination and tests and detailed visual examination of concrete adjacent to tendon bearing plates from 5 years to 10 years.
- Eliminate the requirement for sample wire removal and testing and the associated need for tendon de-tensioning/re-tensioning.
- Reduce the number of corrosion protection medium chemical tests.

The U.S. Nuclear Regulatory Commission (NRC) staff reviewed the information provided in the relief request and determined that additional information was needed to complete its review. The enclosed draft request for additional information (RAI) was sent to the licensee by e-mail on March 25, 2021. A clarification call was held on April 6, 2021, during which Exelon indicated it believes information that may address the concern already has been provided to the NRC.

CONTACT: Jonathan Rowley, NRR/DORL 301-415-4053

Exelon directed the NRC staff to letters dated September 21, 2001 (ADAMS Accession No. ML012530249), September 18, 2014 (ADAMS Accession No. ML14265A219), and July 16, 2015 (ADAMS Accession No. ML15154A661). Upon review of those letters and the associated references, the NRC staff technical reviewer determined that enough information was already accessible to address the concern and that the RAI does not need to be formally issued.

Docket Nos. 50-317 and 50-318

Enclosure: Draft Request for Additional Information

## **REQUEST FOR ADDITIONAL INFORMATION REGARDING**

# RELIEF REQUEST CISI-03-01 CONCERNING CONTAINMENT UNBONDED

# POST-TENSIONING SYSTEM INSERVICE INSPECTION REQUIREMENTS

### EXELON GENERATION COMPANY, LLC

### CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2

### DOCKET NOS. 50-317 AND 50-318

Pursuant to the regulatory requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a, Calvert Cliffs Nuclear Power Plant, Units 1 and 2, are currently required to examine the post-tensioning system every 5 years in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, Subsection IWL. On October 6, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20280A508), Exelon submitted to the U.S. Nuclear Regulatory Commission proposed alternative examination requirements on the basis that the alternative actions will provide an acceptable level of quality and safety pursuant to 10 CFR 50.55a(z)(1). Pursuant to 10 CFR 50.55a(z)(1), alternatives to codes and standards requirements may be used when authorized prior to implementation if it is demonstrated that the proposed alternatives would provide an acceptable level of quality and safety. Excerpts from the proposed alternative include the following:

- 1. Extend the interval between post-tensioning system examinations and tests and detailed visual examination of concrete adjacent to tendon bearing plates from 5 years to 10 years.
- 2. Eliminate the requirement for sample wire removal and testing and the associated need for tendon de-tensioning/re-tensioning.
- 3. Reduce the number of corrosion protection medium (CPM) chemical tests.

#### Request for Additional Information

ASME Code, Section XI, Subsection IWL, requires prestressing wires to be removed for corrosion examinations and testing for their yield strength, ultimate tensile strength, elongation, and testing for CPM and free water samples. The relief request stated that many of the prestressing wires had been degraded due to corrosion. The relief request indicated that the prestressing wires in Unit 1 (47) and Unit 2 (46) had been severely degraded due to corrosion in the period from 1991 to 1997. The relief request did not describe the severity of the corroded wires and their reduced yield strength and ultimate tensile strength and reduced ductility.

Although the relief request does contain some corrosion test data, there is no test data specifically on those corroded prestressing wires. Describe:

- (a) the severity of the corrosion of these wires,
- (b) the yield strength, ultimate tensile strength, elongation, of these degraded wires, and
- (c) test results of CPM and free water samples related to these corroded wires.

#### SUBJECT: CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2 – RELIEF REQUEST CISI-03-01 CONCERNING CONTAINMENT UNBONDED POST-TENSIONING SYSTEM INSERVICE INSPECTION REQUIREMENTS (EPID L-2020-LLR-0135) DATED MAY 21, 2021

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#### ADAMS Accession No.: ML21130A038

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