

From: Wall, Scott
Sent: Tuesday, February 16, 2021 2:21 PM
To: Michael K. Scarpello
Cc: Helen L Levendosky; Joe Tanko; Bradford M Culwell
Subject: Final RAI - D.C. Cook 2 - License Amendment Request for One-Time Extension Containment Type A ILRT (EPID No. L-2020-LLA-0280)

Dear Mr. Scarpello,

By letter dated December 14, 2020 (ADAMS Accession No. ML20363A011), Indiana Michigan Power Company submitted a license amendment request (LAR) for Donald C. Cook Nuclear Plant, Unit No. 2 (CNP-2) to allow for a one-time extension of the CNP-2 containment leakage rate test (i.e., the Type A test or Integrated Leakage Rate Test (ILRT)). The proposed amendment would extend the ILRT frequency by approximately 18 months to no later than the plant startup after the fall 2022 refueling outage.

The NRC staff has reviewed the submittals and determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). During a telephone call on February 16, 2021, the I&M staff indicated that a response to the RAIs would be provided by February 19, 2021.

If you have questions, please contact me at 301-415-2855 or via e-mail at Scott.Wall@nrc.gov.

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Docket Nos. 50-316

Enclosure:
Request for Additional Information

cc: Listserv

RAI-ESEB (ILRT)

REQUEST FOR ADDITIONAL INFORMATION

INTEGRATED LEAKAGE RATE TEST

INDIANA MICHIGAN POWER COMPANY

DONALD C. COOK NUCLEAR PLANT, UNIT NO. 2

DOCKET NO. 50-316

INTRODUCTION

By letter dated December 14, 2020 (ADAMS Accession No. ML20363A011), Indiana Michigan Power Company submitted a license amendment request (LAR) for Donald C. Cook Nuclear Plant, Unit No. 2 (CNP-2) to allow for a one-time extension of the CNP-2 containment leakage rate test (i.e., the Type A test or Integrated Leakage Rate Test (ILRT)). The proposed amendment would extend the ILRT frequency by approximately 18 months to no later than the plant startup after the fall 2022 refueling outage.

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing the application and has determined that the following additional information is required in order to complete the review.

APPLICABLE REGULATION AND GUIDANCE

Subsection IWL of the American Society of Mechanical Engineers Boiler and Pressure Vessel (ASME Code), Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," as incorporated by reference in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a, (b)(2)(v)(iii), requires general visual examinations for concrete components.

Issue

In Section 4.4.2, "IWL Examinations," of the December 14, 2020, application, the licensee stated that the 2006, 2011, and 2017 inspection results indicated that (1) a small section (approximately one square inch) of spalled concrete was discovered, exposing either rebar or a mechanical rebar splice connector, (2) four surface cracks between 1/32 in. and 1/16 in. were found, (3) there were concrete popouts, (4) the maximum depth of the spalling and popout identified was only 1 in. deep which is bounded by the criterion of concrete elements for "a loss of concrete cover up to 3 inches", and (5) the degraded concrete conditions that were observed in the IWL inspections have either been repaired or determined to be structurally acceptable. The above descriptions create inconsistency with respect to concrete degradation, and of the adequacy of the criterion for determining structural acceptability without a need of repairing for the degraded concrete.

RAI-ESEB-01

The minimum concrete cover thickness for rebar or mechanical rebar splice connectors is 1.5 inches, based on the American Concrete Institute (ACI) Code. If rebar is exposed as stated, the depth of concrete cracking would be at least 1.5 inches below the concrete surface. Concrete spalling or popout typically has an inverted cone shape (larger area on the concrete surface and smaller area near the rebar). Therefore, for a 45 degrees cone with its apex at the rebar, the surface area would be 7.07 square inches ($3.1416 \times 1.5 \text{ in} \times 1.5 \text{ in}$), not one square inch as stated. In addition to the above inconsistency, the licensee's description that "the maximum depth of the spalling and popout identified was only 1 in. deep" is also inconsistent with the minimum concrete cover of 1.5 inches for rebars.

- To help resolve these inconsistencies, please describe the cause and the three-dimensional shape of the concrete spalling or popout from the concrete surface to the rebar below and how the repair was performed.

RAI-ESEB-02

- Describe the length and depth of these four surface cracks between 1/32 in. and 1/16 in., and how these surface cracks were repaired.

RAI-ESEB-03

The use of “A loss of concrete cover up to 3 inches” as a bounding criterion for accessing structural acceptability is unclear.

- Please confirm that the containment remains structurally acceptable with “a loss of concrete cover up to 3 inches.”
- Describe the basis for the 3 inch cover criterion.

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Recipients:
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