

From: Purnell, Blake
Sent: Friday, January 29, 2021 12:55 PM
To: Loomis, Thomas R:(GenCo-Nuc) (thomas.loomis@exeloncorp.com)
Cc: Salgado, Nancy; Gudger, David T:(GenCo-Nuc)
Subject: Exelon Generation Company, LLC - Request for Additional Information Regarding Fleet Alternative Request to Use ASME Code Case N-885
Attachments: RAI - Exelon RR N-885.pdf

Mr. Loomis,

By application dated April 28, 2020 (Agencywide Documents Access and Management System Accession No. ML20119B061), Exelon Generation Company, LLC (Exelon) submitted a request in accordance with Paragraph 50.55a(z)(2) of Title 10 of the Code of Federal Regulations (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a at Braidwood Station, Units 1 and 2; Byron Station, Unit Nos. 1 and 2; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; and R. E. Ginna Nuclear Power Plant. The proposed alternative would allow Exelon to use the American Society of Mechanical Engineers Boiler and Pressure Vessel Code Case N-885, "Alternative Requirements for Table IWB 2500-1, Examination Category B-N-1, Interior of Reactor Vessel, Category B-N-2, Welded Core Support Structures and Interior Attachments to Reactor Vessels, Category B-N-3, Removable Core Support Structures: Section XI, Division 1," at these facilities.

The U.S. Nuclear Regulatory Commission staff is reviewing the application and has determined that additional information is needed to complete the review. A response to the attached request for additional information is requested to be provided within 30 days from the date of this email. If you have any questions, please contact me by email or phone at (301) 415-1380.

Sincerely,

Blake Purnell, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission

Docket Nos. STN 50-456, STN 50-457, STN 50-454, STN 50-455, 50-317, 50-318, and 50-244

EPID L-2020-LLR-0069

OFFICE	NRR/DORL/LPL3/PM	NRR/DORL/LPL3/BC
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Created By: Blake.Purnell@nrc.gov

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Tracking Status: None

"Gudger, David T:(GenCo-Nuc)" <David.Gudger@exeloncorp.com>

Tracking Status: None

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REQUEST FOR ADDITIONAL INFORMATION

EXELON GENERATION COMPANY, LLC

PROPOSED ALTERNATIVE TO USE ASME CODE CASE N-885

DOCKET NOS. STN 50-456, STN 50-457, STN 50-454, STN 50-455, 50-317, 50-318, AND 50-244

By application dated April 28, 2020 (Agencywide Documents Access and Management System Accession No. ML20119B061), Exelon Generation Company, LLC (Exelon) submitted a request in accordance with Paragraph 50.55a(z)(2) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a at Braidwood Station, Units 1 and 2 (Braidwood); Byron Station, Unit Nos. 1 and 2 (Byron); Calvert Cliffs Nuclear Power Plant, Units 1 and 2 (Calvert Cliffs); and R. E. Ginna Nuclear Power Plant (Ginna). The proposed alternative would allow Exelon to use the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code Case N-885, "Alternative Requirements for Table IWB-2500-1, Examination Category B-N-1, Interior of Reactor Vessel, Category B-N-2, Welded Core Support Structures and Interior Attachments to Reactor Vessels, Category B-N-3, Removable Core Support Structures: Section XI, Division 1," at these facilities.

The regulations in 10 CFR 50.55a(z) state, in part, that alternatives to the requirements in paragraphs (b) through (h) of 10 CFR 50.55a may be authorized by the NRC if the licensee demonstrates that: (1) the proposed alternative provides an acceptable level of quality and safety, or (2) compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The U.S. Nuclear Regulatory Commission (NRC) has reviewed the application and determined that the information below is needed to complete its review.

Request for Additional Information (RAI) 1

Discussion

The April 28, 2020, application states, in part (emphasis added):

Exelon proposes to implement the requirements of ASME Code Case N-885 in lieu of the requirements of Section XI, IWB-2500(a), Table IWB-2500-1 (B-N-1, B-N-2, B-N-3), and IWB-3520. The Code Case has eliminated Table IWB-2500-1 (B-N-1, B-N-2, B-N-3), Item Number B13.10 VT-3 examinations and associated acceptance standards. The current code technical requirements concerning Examination Category B-N-2 and B-N-3, Item Numbers B13.50, B13.60, and B13.70 examinations and **associated acceptance standards are retained** but with modified Examination Category and Item Number assignments.

Currently, the acceptance standard for VT-3 visual examinations of interior attachments beyond the beltline region (Item No. B13.60, Examination Category B-N-2) and core support structure (Item No. B13.70, Examination Category B-N-3) are specified in subparagraph IWB-3520.2 of the ASME BPV Code, Section XI, which states:

The following relevant conditions²⁸ shall require corrective action in meeting the requirements of IWB-3122 prior to service or IWB-3142 prior to continued service:

- (a) structural distortion or displacement of parts to the extent that component function may be impaired;
- (b) loose, missing, cracked, or fractured parts, bolting, or fasteners;
- (c) foreign materials or accumulation of corrosion products that could interfere with control rod motion or could result in blockage of coolant flow through fuel;
- (d) corrosion or erosion that reduces the nominal section thickness by more than 5%;
- (e) wear of mating surfaces that may lead to loss of function; or
- (f) structural degradation of interior attachments such that the original cross-sectional area is reduced more than 5%.

Subparagraphs IWB-3122.1 and IWB-3142.1 state, in part, that components whose visual examination confirms the absence of the relevant conditions shall be acceptable for service or continued service, respectively.

Code Case N-885 would require VT-3 visual examinations of interior welded attachments beyond the beltline region, welded core support structure, and removable core support structure (referred to as the subject components below). Code Case N-885 provides an alternative acceptance standard (-3520.2) for the VT-3 visual examinations of these components that does not include condition (c) above.

Exelon's statement that the "associated acceptance standards are retained" appears to be inconsistent with the changes to the acceptance standard for VT-3 visual examinations in Code Case N-885. In addition, the application has not provided a basis for using this alternative acceptance standard (-3520.2). The application cites EPRI report 3002012966, "Evaluation of Basis for Periodic Visual Examination of Accessible Areas of Reactor Vessel Interior per Examination Category B-N-1 of ASME Section XI, Division 1," as the primary basis for the proposed alternative. However, changes to the requirements for Examination Categories B-N-2 and B-N-3 were not within the scope of this EPRI report.

Request

With respect to the components subject to VT-3 visual examinations under Code Case N-885, demonstrate that either:

- A. the proposed alternative acceptance standard (-3520.2) for VT-3 visual examinations in Code Case N-885 provides an acceptable level of quality and safety, or
- B. compliance with subparagraph IWB-3520.2 of the ASME BPV Code, Section XI, would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

RAI 2

Discussion

The licensee requested, in part, an alternative to the acceptance standard for VT-3 visual examinations in subparagraph IWB-3520.2 of the ASME BPV Code, Section XI. Code Case N-885 eliminates the subparagraph IWB-3520.2 requirement to perform corrective action if foreign materials or accumulation of corrosion products that could interfere with control rod motion or could result in blockage of coolant flow through fuel (condition (c) above) are identified during the VT-3 visual examinations of the subject components.

The application does not discuss how related regulatory requirements would continue to be met with this proposed change. For example, the licensee proposes changes to specific corrective action requirements in the ASME BPV Code, Section XI, but the application does not discuss the more general corrective action requirements in Criterion XVI, "Corrective Action," of 10 CFR Part 50, Appendix B. In addition, the technical specifications for each facility include requirements regarding control rods, reactor fuel, and the emergency core cooling system that may apply upon discovery of condition (c).

Request

Describe how other regulatory requirements would continue to ensure that control rod motion and coolant flow through reactor fuel is acceptable. Discuss how these regulatory requirements would continue to be met with the proposed change in the acceptance standard for VT-3 visual examinations. The discussion should include the following regulatory requirements:

- Criterion XVI of 10 CFR Part 50, Appendix B, and
- Technical specification requirements (e.g., operability definition, limiting conditions for operations, surveillance requirements) related to control rods, reactor fuel, and the emergency core cooling system.

RAI 3

The application states, in part:

The proposed alternative is for use of Code Case N-885 for the remainder of each plant's 10-year inspection interval as specified in Section 2 or such time as the NRC approves the Code Case in the Regulatory Guide or other document.

This statement does not clearly indicate that Exelon would discontinue use of the proposed alternative at the end of the current 10-year inservice inspection interval for each plant if the NRC has not approved the Code Case N-885 for generic use.

Confirm that the duration of the proposed alternative would not go beyond the current 10-year inservice inspection interval for each plant.