



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

April 14, 2020

Mr. Bryan C. Hanson
Senior Vice President
Exelon Generation Company, LLC
President and Chief Nuclear Officer (CNO)
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; LIMERICK GENERATING STATION, UNITS 1 AND 2; NINE MILE POINT NUCLEAR STATION, UNITS 1 AND 2; PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3; AND R. E. GINNA NUCLEAR POWER PLANT – WITHDRAWAL OF REQUESTED ALTERNATIVE TO SUPPLEMENTAL VALVE POSITION INDICATION TESTING FREQUENCY (EPID L-2020-LLR-0037)

Dear Mr. Hanson:

By letter dated February 28, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20059P100), Exelon Generation Company, LLC (Exelon) submitted a request for an alternative to the requirements of Section 50.55a, "Codes and standards," of Title 10 of the *Code of Federal Regulations* (10 CFR) and the 2012 Edition of the American Society of Mechanical Engineers Code for Operation and Maintenance of Nuclear Power Plants for Braidwood Station, Units 1 and 2; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Clinton Power Station, Unit No. 1; Limerick Generating Station, Units 1 and 2; Nine Mile Point Nuclear Station, Units 1 and 2; Peach Bottom Atomic Power Station, Units 2 and 3; and R. E. Ginna Nuclear Power Plant. The proposed alternative would allow Exelon to decrease the frequency of supplemental valve position indication testing for certain valves.

During a teleconference on April 1, 2020, the U.S. Nuclear Regulatory Commission (NRC) staff informed Exelon that the application did not provide sufficient information to be accepted for a detailed review. By letter dated April 10, 2020 (ADAMS Accession No. ML20101P584), Exelon requested to withdraw the application. The NRC staff acknowledges Exelon's request to withdraw the application. The staff's review of the application has ceased and EPID L-2020-LLR-0037 is closed.

If Exelon decides to resubmit the request for the proposed alternative, the application must provide the information specified in the enclosure to this letter for the NRC staff to accept the application for review. Additionally, a pre-application meeting should be held prior to resubmittal. Other aspects of the requested alternative may also be insufficient, but were not identified by the staff since a detailed review of the application was not completed.

B. Hanson

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If you have any questions, please contact me by email at Blake.Purnell@nrc.gov.

Sincerely,

/RA/

Blake Purnell, Project Manager
Plant Licensing Branch III
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456, STN 50-457, 50-317,
50-318, 50-461, 50-352, 50-353, 50-220,
50-410, 50-277, 50-278, and 50-244

Enclosure:
Information Needed for Resubmittal

cc: Listserv

INFORMATION NEEDED FOR RESUBMITTAL
PROPOSED ALTERNATIVE TO
THE SUPPLEMENTAL VALVE POSITION INDICATION TESTING FREQUENCY
EXELON GENERATION COMPANY, LLC
DOCKET NOS. STN 50-456, STN 50-457, 50-317, 50-318, 50-461, 50-352, 50-353,
50-220, 50-410, 50-277, 50-278, and 50-244

By letter dated February 28, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20059P100), Exelon Generation Company, LLC (Exelon) submitted a request for an alternative to the requirements of Section 50.55a, "Codes and standards," of Title 10 of the *Code of Federal Regulations* (10 CFR) and the 2012 Edition of the American Society of Mechanical Engineers (ASME) Code for Operation and Maintenance of Nuclear Power Plants (OM Code) for Braidwood Station, Units 1 and 2; Calvert Cliffs Nuclear Power Plant, Units 1 and 2; Clinton Power Station, Unit No. 1; Limerick Generating Station, Units 1 and 2; Nine Mile Point Nuclear Station, Units 1 and 2; Peach Bottom Atomic Power Station, Units 2 and 3; and R. E. Ginna Nuclear Power Plant. By letter dated April 10, 2020 (ADAMS Accession No. ML20101P584), Exelon requested to withdraw the application. If Exelon decides to resubmit the request for the proposed alternative, the application must provide the information specified below.

Discussion

The proposed alternative would allow Exelon to decrease the frequency of supplemental valve position indication (SPI) testing for numerous valves at several facilities using a risk-informed approach. The proposed alternative does not identify changes to the verification testing that would improve the accuracy of the tests or provide additional confidence that the position indication will remain accurate for a longer time; therefore, the proposed alternative does not provide an increase in safety. Conversely, the increased interval between tests will increase the likelihood that the remote position indication is not accurate if any time dependent failure modes exist and increases the time (exposure time) during which an inaccurate indication will exist. Therefore, a risk-informed submittal consistent with Regulatory Guide (RG) 1.174, Revision 3, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis" (ADAMS Accession No. ML17317A256), is needed for the U.S. Nuclear Regulatory Commission (NRC) staff to determine that the proposed alternative provides an acceptable level of quality and safety.

In accordance with RG 1.174, the NRC staff evaluates risk-informed applications to ensure that the proposed changes meet the following key principles:

1. The proposed change meets the current regulations, unless it explicitly relates to a requested exemption.
2. The proposed change is consistent with the defense-in-depth philosophy.
3. The proposed change maintains sufficient safety margins.

Enclosure

4. When proposed changes result in an increase in core damage frequency or risk, the increase should be small and consistent with the intent of the Commission's Safety Goal Policy Statement (60 FR 42622).
5. The impact of the proposed change should be monitored using performance measurement strategies.

Based on these five key principles, RG 1.174 identifies an approach to evaluating proposed licensing basis changes that involves the following four principle elements: (1) define the proposed change; (2) perform engineering analysis; (3) define implementation and monitoring; and (4) submit proposed change. For the proposed alternative, the NRC staff needs additional information that addresses the first three elements.

Information needed

1. Identify those aspects of the plant licensing basis that may be affected by the proposed alternative. This should include a comprehensive list of the different types of valves and any other systems, structures, or components affected by the proposed alternative. In addition, other activities which rely on the valve position indications (e.g., control room operations, surveillances, tests) should be described.

For each type of valve, provide the following:

- a. the associated remote position indications,
 - b. structures, systems, and components that are necessary for accurate remote position indications,
 - c. a comparison of the current test to verify the accuracy of the remote position indications to the specific tests that will be used under the proposed alternative.
2. Identify available engineering studies, methods, codes, applicable plant-specific and industry data and operational experience, findings from probabilistic risk assessment (PRA), and results from research and analyses relevant to the proposed alternative. For each type of valve this should include:
 - a. The relationship between the design-basis or safety-significant functions of the valve itself and how the remote position indication supports these functions.
 - b. Current unreliability of the valve type for the different functions and the extent that this unreliability is caused by the failure in the remote position indication.
 - c. Whether the remote position indication itself supports a design-basis or safety-significant function (e.g., supports operation or test procedures) and, if so, which functions are relied on.
 - d. A methodology to estimate the change in remote indication reliability and how its failure modes affect the valve unreliability based on the change in the SPI testing, both for the extended intervals and, if applicable, the change in tests.
 - e. A methodology to evaluate the impact of inaccurate remote indications of post-initiating event operator actions required to mitigate accident sequences.
 3. Provide an evaluation of the impact of the proposed alternative on defense-in-depth and safety margins that addresses each of the considerations in RG 1.174, Section 2.1. This evaluation should cover each aspect of the plant licensing basis that may be affected by the proposed alternative.

4. Exelon's bases for the proposed alternative focuses on valve testing, consequence of valve failure, and susceptibility of valve failure. For both the open and closed position indications, explain how valve testing, consequence of valve failure, and susceptibility of valve failure relate to demonstrating the accuracy of the position indications and justify extending the SPI test interval.
5. Provide a detailed description of the SPI risk ranking methodology and how it will be applied. Explain how this methodology is related to other approved risk-informed processes in use at Exelon's facilities. For each plant, specifically identify the PRA models to be used and justify their use for the SPI risk ranking methodology. Include a discussion regarding compliance with RG 1.200, Revision 2, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities" (ADAMS Accession No. ML090410014), and information regarding closeout of findings and observations from the associated peer review.
6. For each type of valve, explain how the consequence and susceptibility of failure will be determined. This should include detailed criteria and justification for the methodology, and how it relates to the position indication. Identify possible failure modes for the position indication and explain why the stem-disc connection failure is the only failure mode considered under the methodology.
7. The application states that within the SPI risk ranking methodology, valves will be categorized as either high or low safety-significant components. Exelon states that it will use qualitative means, such as a maintenance rule expert panel, to make this determination when qualitative means are not available. Provide a detailed description and justification of the process and criteria that will be used to qualitatively categorize the valves.
8. Provide an estimate of the change in risk associated with extending the SPI test intervals.
9. Explain how the check valve condition monitoring program supports the requested extension of the SPI testing interval for check valves with remote position indication. Describe how SPI test intervals will be determined under this program.
10. Describe the monitoring program for valves with remote position indication and how it will be used to adjust the SPI testing frequency.

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ADAMS Accession No.: ML20092M768 *by email

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