



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

September 3, 2021

Mr. David P. Rhoades
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 — PROPOSED ALTERNATIVE TO USE ASME OM CODE CASE OMN-28 (EPID L-2021-LLR-0056)

Dear Mr. Rhoades:

By application dated August 5, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21217A117), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a, "Codes and standards," for Braidwood Station (Braidwood), Units 1 and 2; Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Units 1 and 2; Clinton Power Station (Clinton), Unit No. 1; Limerick Generating Station (Limerick), Units 1 and 2; Nine Mile Point Nuclear Station (NMP), Units 1 and 2; Peach Bottom Atomic Power Station (Peach Bottom), Units 2 and 3; and R. E. Ginna Nuclear Power Plant (Ginna) (collectively, the facilities).

The American Society of Mechanical Engineers (ASME), *Operation and Maintenance of Nuclear Power Plants*, Division 1, Section IST (OM Code), as incorporated by reference in 10 CFR 50.55a, specifies requirements for the inservice testing (IST) of nuclear power plant components. Exelon requests to use the ASME OM Code Case OMN-28, "Alternative Valve Position Verification Approach to Satisfy ISTC-3700 for Valves Not Susceptible to Stem-Disk Separation," as an alternative to the IST requirements in the 2012 Edition of the ASME OM Code, as supplemented by 10 CFR 50.55a, for certain specified valves at its 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 U.S. Nuclear Regulatory Commission (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 NRC staff has reviewed Exelon's application and concludes, as set forth in the enclosed safety evaluation, that the licensee has adequately addressed the regulatory requirements set

forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the licensee to use the proposed alternative to implement the ASME OM Code Case OMN-28 in its entirety, as specified in its August 5, 2021, application, for the verification of valve position indication for valves identified as having position indication requirements (referred to as PI requirements) in the updated IST Program Plans referenced below that are not susceptible to stem-disk separation, in lieu of the requirements in the ASME OM Code (2012 Edition), Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi). This authorization is for the remainder of the current 10-year IST intervals at Braidwood, Units 1 and 2; Calvert Cliffs, Units 1 and 2; Clinton, Unit No. 1; Limerick, Units 1 and 2; NMP, Units 1 and 2; Peach Bottom, Units 2 and 3; and Ginna.

The updated IST Program Plans applicable to the current 10-year IST intervals for each facility are the following:

1. Braidwood, Units 1 and 2, "Inservice Testing Program, Fourth Ten Year Interval," Revision 4, submitted by letter dated April 28, 2021 (ADAMS Package Accession No. ML21118A009);
2. Calvert Cliffs, Units 1 and 2, "Inservice Testing (IST) Program Plan, Fifth Ten-Year Interval," Revision 00, submitted by letter dated July 6, 2018 (ADAMS Accession No. ML18192B990);
3. Clinton, Unit No. 1, "Inservice Testing (IST) Program Plan, 4th Ten-Year Interval," Revision 1, submitted by letter dated May 23, 2021 (ADAMS Accession No. ML21225A189);
4. Limerick, Units 1 and 2, "Inservice Testing (IST) Program Plan, Fourth Ten-Year Interval," Revision 28, submitted by letter dated March 3, 2021 (ADAMS Accession No. ML21062A050);
5. NMP, Units 1 and 2 "Inservice Testing (IST) Program Plan, Unit 1 Fifth 10-Year Interval, Unit 2 Fourth 10-Year Interval," Revision 09, submitted by letter dated March 13, 2019 (ADAMS Accession No. ML19072A182);
6. Peach Bottom, Units 2 and 3, "Inservice Testing (IST) Program Plan, 5th Ten-Year Interval," Revision 006, submitted by letter dated November 29, 2018 (ADAMS Accession No. ML18337A196); and
7. Ginna, "Inservice Testing (IST) Program Plan, Sixth 10-Year Interval," Revision 0, submitted by letter dated February 5, 2020 (ADAMS Accession No. ML20036C593).

All other ASME OM Code requirements, as incorporated by reference in 10 CFR 50.55a, for which relief or an alternative was not specifically requested, and granted or authorized (as appropriate), in the subject request remain applicable.

If you have any questions, please contact Blake Purnell at 301-415-1380 or via e-mail at Blake.Purnell@nrc.gov.

Sincerely,

Nancy L. Salgado, Chief
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:
Safety Evaluation

cc: Listserv



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

PROPOSED ALTERNATIVE TO USE ASME OM CODE CASE OMN-28

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

R.E. GINNA NUCLEAR POWER PLANT

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

1.0 INTRODUCTION

By application dated August 5, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21217A117), Exelon Generation Company, LLC (Exelon, the licensee) submitted a request in accordance with paragraph 50.55a(z)(1) of Title 10 of the *Code of Federal Regulations* (10 CFR) for a proposed alternative to certain requirements of 10 CFR 50.55a, "Codes and standards," for Braidwood Station (Braidwood), Units 1 and 2; Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Units 1 and 2; Clinton Power Station (Clinton), Unit No. 1; Limerick Generating Station (Limerick), Units 1 and 2; Nine Mile Point Nuclear Station (NMP), Units 1 and 2; Peach Bottom Atomic Power Station (Peach Bottom), Units 2 and 3; and R. E. Ginna Nuclear Power Plant (Ginna) (collectively, the facilities).

The American Society of Mechanical Engineers (ASME), *Operation and Maintenance of Nuclear Power Plants*, Division 1, Section IST (OM Code), as incorporated by reference in 10 CFR 50.55a, specifies requirements for the inservice testing (IST) of nuclear power plant components. Exelon requests to use the ASME OM Code Case OMN-28, "Alternative Valve Position Verification Approach to Satisfy ISTC-3700 for Valves Not Susceptible to Stem-Disk Separation," as an alternative to the IST requirements in the 2012 Edition of the ASME OM Code, as supplemented by 10 CFR 50.55a, for certain specified valves at its facilities.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a(f)(4) state, in part, that throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the IST requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in 10 CFR 50.55a(f)(2) and (3) and that are incorporated by reference in 10 CFR 50.55a(a)(1)(iv), to the extent practical within the limitations of design, geometry, and materials of construction of the components. The 2012 edition of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a with conditions, is applicable to the current 10-year IST intervals at the facilities.

The NRC regulations in 10 CFR 50.55a(b)(3)(xi), "OM condition: Valve Position Indication," state the following:

When implementing paragraph ISTC-3700, "Position Verification Testing," in the ASME OM Code, 2012 Edition through the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section [10 CFR 50.55a], licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies.

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.

3.0 TECHNICAL EVALUATION

3.1 Licensee's Request

3.1.1 ASME Code Components Affected

In its application, the licensee states that the valves covered by ASME OM Code Case OMN-28 are those stem-disk separation non-susceptible valves with remote position indication within the scope of Subsection ISTC of the ASME OM Code (2012 Edition) including its mandatory appendices and their verification methods and frequencies, in accordance with regulatory requirements. The licensee notes that a listing of the valves requiring position indication and testing in accordance with ASME OM Code, Subsection ISTC, paragraph ISTC-3700, was submitted with the IST Program update performed as part of the interval update and latest revisions for each facility. The latest revision of the updated IST Program Plans submitted to the NRC for the current 10-year IST intervals at each facility are referenced in Table 1 below.

3.1.2 Applicable Code Edition and Addenda

The 2012 edition of the ASME OM Code, as incorporated by reference in 10 CFR 50.55a with conditions, is applicable to the current 10-year IST intervals at the facilities. The current IST

interval, including the start and end dates, and latest revision of the updated IST Program Plan for each plant is provided in Table 1 below.

Table 1: Current IST Interval and Program Plan Information.

Plant	IST Interval	Start	End	IST Program Plan Submittal Date and ADAMS Accession No.
Braidwood, Units 1 and 2	4th	7/29/2018	7/28/2028	4/28/2021 ML21118A009 (Package)
Calvert Cliffs, Units 1 and 2	5th	7/1/2018	6/30/2028	7/6/2018 ML18192B990
Clinton, Unit No. 1	4th	7/1/2020	6/30/2030	5/23/2021 ML21225A189
Limerick, Units 1 and 2	4th	1/8/2020	1/7/2030	3/3/2021 ML21062A050
NMP, Unit 1	5th	1/1/2019	12/31/2028	3/13/2019 ML19072A182
NMP, Unit 2	4th	1/1/2019	12/31/2028	3/13/2019 ML19072A182
Peach Bottom, Units 2 and 3	5th	11/16/2018	8/14/2028	11/29/2018 ML18337A196
Ginna	6th	1/1/2020	12/31/2029	2/5/2020 ML20036C593

3.1.3 Applicable Code Requirements

Paragraph ISTC-3700, "Position Verification Testing," of the ASME OM Code (2012 Edition) states:

Valves with remote position indicators shall be observed locally at least once every 2 yr [years] to verify that valve operation is accurately indicated. Where practicable, this local observation should be supplemented by other indications such as use of flow meters or other suitable instrumentation to verify obturator position. These observations need not be concurrent. Where local observation is not possible, other indications shall be used for verification of valve operation.

Position verification for active MOVs [motor-operated valves] shall be tested in accordance with Mandatory Appendix III of this Division.

As noted in Section 2.0 of this safety evaluation (SE), when implementing this paragraph, "licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC [of the ASME OM Code] including its mandatory appendices and their verification methods and frequencies."

3.1.4 Licensee's Proposed Alternative, Reason for Request, and Basis for Use

The licensee's proposed alternative is to use ASME OM Code Case OMN-28 (approved for use by ASME on March 4, 2021) in lieu of the requirements in paragraph ISTC-3700 of the ASME OM Code for the specific valves described in Section 3.1.1 of this SE. The licensee did not propose any deviations from the code case. The licensee stated that implementation of Code Case OMN-28 would provide an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1).

The licensee stated: "The position verification with Supplemental Position Indication (SPI) requires the valves to be exercised in the open and closed direction and the valve's position verified by other indications such as use of flow meters or other suitable instrumentation to verify obturator position." The licensee also stated that Code Case OMN-28 "has been determined to satisfy the valve position verification requirements in ASME OM Code, Subsection ISTC, paragraph ISTC-3700, for valves that are not susceptible to stem-disk separation."

Valves with remote position indication within the scope of ASME OM Code, Subsection ISTA, paragraph ISTA-1100, "Scope," not satisfying the scope and provisions of Code Case OMN-28 shall meet the valve position verification requirements in ASME OM Code, Subsection ISTC, paragraph ISTC-3700, in accordance with the regulatory requirements.

3.2 NRC Staff's Evaluation

The NRC staff reviewed the provisions in the ASME OM Code Case OMN-28 used to demonstrate that the remote position indicators for valves that are not susceptible to stem-disk separation accurately represent valve operation (open and closed). The code case requires remote position verification for valves that are not susceptible to stem-disk separation to include: (a) observation of evidence, such as changes in system pressure, flow rate, level, or temperature, that represent valve operation; (b) local observation of valve operation where practicable; and (c) stem-disk separation evaluation shall be documented and available for regulatory review demonstrating that the stem-disk connection is not susceptible to separation. For active valves not susceptible to stem-disk separation, the code case states that these observations shall be performed at least once every 12 years. For passive valves not susceptible to stem-disk separation, the code case states that these observations shall be performed whenever the valve is stroked from its passive position or every 12 years, whichever is greater.

The licensee proposes to implement the ASME OM Code Case OMN-28 in its entirety, without any deviations, for the specific valves described Section 3.1.1 of this SE. Based on the review of the provisions in the code case, the NRC staff has reasonable assurance that the remote position indicators for these specific valves will be properly verified to accurately represent valve operation (open and closed). Therefore, the NRC staff finds that, for these specific valves, the implementation of the proposed alternative at each facility provides an acceptable level of quality and safety in accordance with 10 CFR 50.55a(z)(1).

4.0 CONCLUSION

As set forth above, the NRC staff determined that the licensee's proposed alternative to implement the ASME OM Code Case OMN-28 in its entirety, without any deviations, for the specified valves provides an acceptable level of quality and safety. Accordingly, the NRC staff

concludes that the licensee has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes the licensee to use the proposed alternative to implement the ASME OM Code Case OMN-28 in its entirety, as specified in its August 5, 2021, application, for the verification of valve position indication for valves identified as having position indication requirements (referred to as PI requirements) in the IST Program Plans listed in Table 1 that are not susceptible to stem-disk separation, in lieu of the requirements in the ASME OM Code (2012 Edition), Subsection ISTC, paragraph ISTC-3700, as incorporated by reference in 10 CFR 50.55a and supplemented by 10 CFR 50.55a(b)(3)(xi). This authorization is for the remainder of the current 10-year IST intervals at Braidwood, Units 1 and 2; Calvert Cliffs, Units 1 and 2; Clinton, Unit No. 1; Limerick, Units 1 and 2; NMP, Units 1 and 2; Peach Bottom, Units 2 and 3; and Ginna.

All other ASME OM Code requirements, as incorporated by reference in 10 CFR 50.55a, for which relief or an alternative was not specifically requested, and granted or authorized (as appropriate), in the subject request remain applicable.

Principal Contributors: Thomas G. Scarbrough, NRR

Date of issuance: September 3, 2021

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 — PROPOSED ALTERNATIVE TO USE ASME OM CODE CASE OMN-28 (EPID L-2021-LLR-0056) DATED SEPTEMBER 3, 2021

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