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

February 4, 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; BYRON STATION, UNIT NOS. 1 AND 2; CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; LASALLE COUNTY STATION, UNITS 1 AND 2; LIMERICK GENERATING STATION, UNITS 1 AND 2; AND NINE MILE POINT NUCLEAR STATION, UNIT 2 — PROPOSED ALTERNATIVE TO USE ASME CODE CASE N-879 (EPID L-2019-LLR-0037)

Dear Mr. Hanson:

By application dated April 30, 2019 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML19122A014), as supplemented by letters dated August 15 and October 16, 2019 (ADAMS Accession Nos. ML19228A023 and ML19289A276, respectively), Exelon Generation Company, LLC (Exelon) submitted a request for a proposed alternative to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a, "Codes and standards," and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code for Braidwood Station (Braidwood), Units 1 and 2; Byron Station (Byron), Unit Nos. 1 and 2; Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Units 1 and 2; Clinton Power Station (Clinton), Unit No. 1; LaSalle County Station (LaSalle), Units 1 and 2; Limerick Generating Station (Limerick), Units 1 and 2; and Nine Mile Point Nuclear Station, Unit 2 (NMP-2).[1] The proposed alternative would allow Exelon to use ASME Code Case N-879, "Use of Micro-Alloyed Carbon Steel Bar in Patented Mechanical Joints and Fittings, Classes 1, 2, and 3, Section III, Division 1," for fittings used in certain Class 2 and 3 piping systems.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation, that Exelon has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes Exelon to use the proposed alternative described in its application, as supplemented, at Braidwood, Byron, Calvert Cliffs, Clinton, LaSalle, Limerick, and NMP-2. This authorization is for the remainder of the current 10-year inservice inspection interval for each of these facilities and for the fourth 10-year inservice inspection interval at Clinton, as specified in Exelon's October 16, 2019, letter.

[1] The original request also included Three Mile Island Nuclear Station, Unit 1, but this request was withdrawn by letter dated June 17, 2019 (ADAMS Accession No. ML19169A031).

All other ASME Code requirements for which relief was not been specifically requested and approved remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

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

Sincerely,

/RA/

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,
STN 50-454, STN 50-455, 50-317, 50-318,
50-461, 50-373, 50-374, 50-352, 50-353,
50-410, and 50-289

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 CODE CASES N-879

BRAIDWOOD STATION, UNITS 1 AND 2

BYRON STATION, UNIT NOS. 1 AND 2

CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2

CLINTON POWER STATION, UNIT NO. 1

LASALLE COUNTY STATION, UNITS 1 AND 2

LIMERICK GENERATING STATION, UNITS 1 AND 2

AND NINE MILE POINT NUCLEAR STATION, UNIT 2

EXELON GENERATION COMPANY, LLC

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

50-461, 50-373, 50-374, 50-352, 50-353, AND 50-410

1.0 INTRODUCTION

By application dated April 30, 2019 (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML19122A014), as supplemented by letters dated August 15 and October 16, 2019 (ADAMS Accession Nos. ML19228A023 and ML19289A276, respectively), Exelon Generation Company, LLC (Exelon) submitted a request for a proposed alternative to the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.55a, "Codes and standards," and the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (ASME Code) for Braidwood Station (Braidwood), Units 1 and 2; Byron Station (Byron), Unit Nos. 1 and 2; Calvert Cliffs Nuclear Power Plant (Calvert Cliffs), Units 1 and 2; Clinton Power Station (Clinton), Unit No. 1; LaSalle County Station (LaSalle), Units 1 and 2; Limerick Generating Station (Limerick), Units 1 and 2; and Nine Mile Point Nuclear Station, Unit 2 (NMP-2) (collectively, the facilities).

The April 30 and August 15, 2019, letters from Exelon also provided documents from Lokring Technology, LLC (Lokring). The August 15, 2019, letter indicated that portions of the Lokring documents could be made public, but it did not provide any new or revised information regarding the requested alternative. By letter dated October 3, 2019, the U.S. Nuclear Regulatory Commission (NRC) staff made portions of the Lokring documents public (ADAMS Accession Nos. ML19242B700 and ML19242B859). The October 16, 2019, supplement

Enclosure

provided a revised version of the original request, and stated that the previously provided Lokring documents remain valid. When referring to the Lokring documents, this safety evaluation (SE) will reference the enclosures of the April 30, 2019, letter.

The proposed alternative would allow Exelon to use ASME Code Case N-879, "Use of Micro-Alloyed Carbon Steel Bar in Patented Mechanical Joints and Fittings, Classes 1, 2, and 3, Section III, Division 1," for certain Class 2 and 3 piping systems. Specifically, this alternative would allow Exelon to use patented mechanical fittings, manufactured by Lokring, which are fabricated from a material that is not currently permitted by Section III, "Rules for Construction of Nuclear Facility Components," of the ASME Code. Exelon requested to use the alternative on the basis that it will provide an acceptable level of quality and safety pursuant to 10 CFR 50.55a(z)(1).

The application originally requested to use the proposed alternative at Three Mile Island Nuclear Station (TMI), Unit 1. However, Exelon withdrew the request for TMI by letter dated June 17, 2019 (ADAMS Accession No. ML19169A031); therefore, this SE is not applicable to TMI.

2.0 REGULATORY EVALUATION

The regulations in 10 CFR 50.55a(g)(4) state, in part, that ASME Code Class 1, 2, and 3 components (including supports) must meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the applicable editions and addenda of the ASME Code to the extent practical within the limitations of design, geometry, and materials of construction of the components.

Paragraph 10 CFR 50.55a(g)(4)(ii) requires, in part, that inservice examination of components and system pressure tests conducted during successive 10-year inservice inspection (ISI) intervals (i.e., after the initial 10-year interval) must comply with the latest edition and addenda of the ASME Code (or the optional ASME Code Cases) incorporated by reference in 10 CFR 50.55a(a) 12 months before the start of the 10-year interval subject to the conditions listed in 10 CFR 50.55a(b).

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 Exelon's Request

3.1.1 ASME Code Components Affected

Exelon stated in its application, as supplemented, that all ASME Code Class 2 and 3 carbon-steel piping systems constructed in accordance with Section III of the ASME Code are affected by this alternative request. Code Case N-879 is limited to fittings which are nominal pipe size (NPS) 2 or smaller. Although Code Case N-879 is also applicable to Class 1 piping, Exelon limited its request to Class 2 and 3 fittings.

3.1.2 Applicable Code Edition and Addenda

Exelon identified the applicable ASME Code editions and addenda for each plant in its October 16, 2019, letter as shown in the table below. In addition, the table shows the associated 10-year ISI interval, including the start and end dates, for each plant.

PLANT	ISI INTERVAL	ASME CODE EDITION	START	END
Braidwood Unit 1	4th	2013 Edition	8/29/2018	7/28/2028
Braidwood Unit 2	4th	2013 Edition	11/5/2018	10/16/2028
Byron Units 1 and 2	4th	2007 Edition, through 2008 Addenda	7/16/2016	7/15/2025
Calvert Cliffs Units 1 and 2	5th	2013 Edition	7/1/2019	6/30/2029
Clinton	3rd	2004 Edition	7/1/2010	6/30/2020
	4th	2013 Edition	7/1/2020	6/30/2030
LaSalle Units 1 and 2	4th	2007 Edition, through 2008 Addenda	10/1/2017	9/30/2027
Limerick Units 1 and 2	4th	2007 Edition, through 2008 Addenda	2/1/2017	1/31/2027
NMP-2	4th	2013 Edition	10/6/2018	8/22/2028

3.1.3 ASME Code Requirements

Subsubarticle IWA-4220 of the ASME Code, Section XI, requires, in part, that items used for repair and replacement activities meet the applicable construction code. Exelon is requesting the alternative for Class 2 and 3 piping systems where the applicable construction code is Section III of the ASME Code. Specifically, Exelon is requesting an alternative to subparagraphs NC/ND-2121(a) of ASME Code, Section III, which specify the requirements for materials used in Class 2 and 3 piping systems, respectively.

Code Case N-879 has been approved by the ASME, but it has not been approved by the NRC staff for generic use by licensees.

3.1.4 Proposed Alternative and Basis for Use

Subparagraphs NC/ND-2121(a) of the ASME Code, Section III, requires pressure retaining ferrous materials used in Class 2 and 3 piping systems, respectively, to comply with the material specifications listed in Table 1A of the ASME Code, Section II, Part D, Subpart 1 (previously Tables I-7.1 and I-8.1 of the ASME Code, Section III, Division 1, Appendix I). As an alternative to these requirements, Exelon requested to use Code Case N-879, which permits the use of a micro-alloyed steel with a chemical composition similar to the specifications in ASME SA-675[1] and ASTM A576,[2] Grade 1524, with the addition of carbon, manganese, vanadium, and nitrogen to increase the yield strength to 80 kilopounds per square inch (ksi). The alternative would allow Exelon to use certain pipe fittings manufactured by Lokring that are made with material meeting the Code Case N-879 requirements.

[1] ASME Code, Section II, Specification SA-675, “Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.”
[2] ASTM International Standard A576, “Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality.”

The material specified in Code Case N-879 is currently permitted to be used in fittings manufactured in accordance with Section B31.1, “Power Piping,” of the ASME Code for Pressure Piping (ASME B31.1). Several Exelon nuclear power plants have safety-related systems designed to ASME B31.1. Section III of the ASME Code also permits the material to be used in compression fittings for instrument lines up to NPS 1. Exelon identified some systems in its facilities where, collectively, several hundred Lokring fittings were installed between 2016 and 2018. However, since the material is not listed in Table 1A of ASME Code, Section II, Part D, Subpart 1, Exelon cannot use mechanical fittings made with the material in piping systems constructed in accordance with ASME Code, Section III, except in instrument lines up to NPS 1.

Exelon’s October 16, 2019, letter states, in part:

> Exelon desires to be able to install fittings made using the material permitted by Code Case N-879 for any application in which plain carbon steel materials, such as SA-106 Grade 8 are used, subject to the NPS 2 size limitation of Code Case N-879. However, the typical applications in which the subject proprietary fittings will be used are generally limited to instrumentation, sampling, and cooling water piping lines. They exclude Class 1 systems and any systems containing boric acid. … The environmental conditions are anything in the nuclear power plant environment, including air, water, or steam systems, and possibly lube oil or fuel systems. … Prior operating experience for these fittings in these environments have shown successful performance, with no leaks or structural failures, as long as they are installed in accordance with the manufacturer’s instructions.

Therefore, the proposed alternative would allow Exelon to use nonstandard (proprietary), welded and nonwelded pipe fittings, for NPS 2 or smaller piping applications, that comply with ASME Code, Section III, except for the material specifications and grades mandated by subparagraphs NC/ND-2121(a). The proprietary fittings will be manufactured by Lokring to Lokring Material Specification (LMS) 92-10, “15V24 Micro Alloyed Carbon Steel Bar,” which meets Code Case N-879. The material was selected to ensure a high-strength, leak-tight, mechanical joint. The material strength of the fitting ensures that deformation occurs in the pipe material in lieu of the fitting material to produce the stresses necessary for the structural and leak-tight integrity of the joint. The fitting material has a chemical composition similar to the specifications in ASME SA-737, “Specification for Pressure Vessel Plates, High-strength, Low-Alloy Steel,” Grade C, which is approved for use in ASME Code, Section III, applications.

The fittings are designed in accordance with subparagraph NB-3671.7 of the ASME Code, Section III, using the option of prototype testing. The proprietary fittings made with material that meets Code Case N-879 have been extensively tested by Exelon and Lokring to demonstrate that the fittings will not fail before the pipe on which they are installed. Testing performed has included tensile (pull-out) testing, pressurization to burst, fatigue testing, and torsion testing. Fatigue analysis is not required for the requested applications but is performed to establish a stress intensification factor for use by the piping system designer. The fittings will also comply with similar requirements in ASME B31.1, paragraph 123.1.2. Exelon stated that all fittings sizes will be tested prior to installation.

Material P-Numbers for welding procedure and performance qualifications are normally listed in ASME Code, Section IX, “Welding, Brazing, and Fusing Qualifications.” The material in Code Case N-879 is not listed in ASME Code, Section IX, and has not been assigned a P-Number. Materials that do not have a P-Number are required to be qualified separately. Separate

qualifications have been performed for the material in Code Case N-879 welded to ASME SA-106, Grade B, pipe using ER70 weld filler material. Exelon stated that welds will be preheated to 70 degrees Fahrenheit (°F), but they will not receive post-weld heat treatment (PWHT). PWHT is undesirable, as it reduces the yield strength resulting in the fitting not being able to resist the compression forces necessary to produce a leak-tight joint. A typical welding procedure and results of welding qualifications were provided in Enclosure 2 of the application. Exelon stated that there is minimal heat-affected-zone (HAZ) hardening and no evidence of martensite formation in the HAZ. Bend tests have been demonstrated to meet ASME Code, Section IX, requirements, as shown in Enclosure 2 of the application.

Based on the above, Exelon concluded that the use of Code Case N-879 provides an acceptable level of quality and safety and is a suitable alternative to the requirements in ASME Code, Section III, to use Table 1A of ASME Code, Section II, Part D, Subpart 1, for ferrous materials.

3.2 NRC Staff's Evaluation

Subsubarticle IWA-4220 of the ASME Code, Section XI, requires, in part, that repairs made to systems constructed to the ASME Code, Section III, must either meet the Section III requirements used for the original construction or subsequent editions and addenda of Section III. Subparagraphs NC/ND-2121(a) of Section III require that pressure-retaining material for Class 2 and 3 systems, respectively, conform to one of the material specifications in Table 1A of Section II, Part D, Subpart 1, of the ASME Code. As an alternative to these requirements, Exelon seeks to use nonstandard, proprietary, welded and nonwelded pipe fittings made from material meeting the requirements in Code Case N-879 in ASME Code Class 2 and 3 systems of NPS 2 or smaller piping.

The material described in Code Case N-879 is a high-manganese, low-carbon, micro-alloyed (vanadium strengthened), hot-worked, control-cooled material that is commonly known as 15V24. The code case specifies that the material must conform to ASTM A576, Grade 1524, with additions of vanadium and nitrogen, and the chemical composition requirements specified in Table 1 of the code case. In addition, the material must meet the mechanical properties in Table 2 of the code case, and otherwise conform to the requirements of ASME SA-675. Exelon plans to use the alternative to procure Lokring fittings fabricated from material meeting LMS 92-10. The LMS 92-10 is identical to the requirements of Code Case N-879, except that it specifies additional requirements for grain size and a maximum tensile strength limit of 130 ksi.

Exelon provided certified material test reports (CMTRs) to support its application for the proposed alternative. The CMTRs indicate that the fitting materials used by Lokring meet LMS 92-10 and Code Case N-879. This material has a chemical composition similar to the specifications for ASME SA-737, Grade C, plate. Tables 1A and 2A in the ASME Code, Section II, Part D, indicate that SA-737, Grade C, material is acceptable for use in the fabrication of Class 1, 2, and 3 pressure-retaining components designed to operate at temperatures up to 700 °F. Code Case N-879 specifies that the material must contain 0.10–0.20 weight percent vanadium, as compared to the 0.04–0.11 weight percent vanadium specified for ASME SA-737, Grade C, material. The higher vanadium composition of the Code Case N-879 material accounts for the higher minimum yield strength (80 ksi vs 60 ksi) and higher minimum tensile strength (110 ksi vs 80 ksi) than ASME SA-737, Grade C, material. However, the code case limits use of the material for fittings to a maximum design temperature of 650 °F.

During the production of 15V24, hot-working and controlled-cooling typically produces a fine grain ferrite-pearlite structure with good strength, ductility, and fatigue properties. As a result of the chemical composition, hot-working, and controlled-cooling of this material, detrimental microstructures (e.g., martensite) are not present. In addition, this material requires no additional heat treatment, such as quench and temper, to achieve the required mechanical properties. For 15V24 to meet Code Case N-879 and LMS 92-10, the required mechanical properties are 80 ksi minimum yield strength, 110–130 ksi tensile strength, and a minimum elongation of 15 percent (in 2 inches). The ASME Code, Section III, does not require impact testing for components less than 0.625-inches thick. The maximum thickness of Lokring fittings for use on NPS 2, Schedule 80 piping is approximately 0.375 inches; therefore, impact testing for the proposed fitting is not required.

The material specified in Code Case N-879 is currently permitted to be used in fittings manufactured in accordance with ASME B31.1. Several Exelon nuclear power plants have safety-related systems designed to ASME B31.1. Section III of the ASME Code also permits the material to be used in compression fittings for instrument lines up to NPS 1. As noted above, Exelon stated that prior operating experience for these fittings in nuclear power plant environments have shown successful performance, with no leaks or structural failures, as long as they are installed in accordance with the manufacturer's instructions. The NRC staff also notes that Lokring fittings manufactured from 15V24 have been successfully used in petrochemical and other industries in various environments.

The proposed alternative would allow Exelon to procure nonwelded pipe fittings (e.g., couplings) or welded fittings fabricated by welding Lokring half-bodies onto ASME Code compliant fittings (e.g., elbows, tees, or flanges) made of carbon-steel material (e.g., ASME SA-234, Grade WPB, and SA-105). The nonwelded pipe fittings and Lokring half-bodies are made from material meeting Code Case N-879 and LMS 92-10. Welding is performed with ER70 weld filler materials using the gas-tungsten arc welding process. The proposed alternative only applies to the portion of mechanical joints or fittings made from material conforming to Code Case N-879. All other portions of the mechanical joints or fittings, including, but not limited to, elbows, tees, or flanges, must meet all ASME Code, Section III, requirements.

The fittings will be designed in accordance with subparagraph NB-3671.7 of the ASME Code, Section III, and will use the option of prototype testing. Although the proposed alternative is only applicable to ASME Code Class 2 and 3 systems, Exelon stated that all design and testing requirements for Class 1 components will be met. The application, as supplemented, states that fittings made from the material specified in Code Case N-879 have undergone tensile testing, pressurization to burst, fatigue testing, and torsion testing to demonstrate that the fitting will not fail before the pipe on which they are installed. In its October 16, 2019, letter, Exelon indicated that the fittings will meet the design requirements of Article NB-3000 of the ASME Code, Section III, which are more stringent than the requirements of Articles NC/ND-3000 for Class 2 and 3 piping, respectively.

Exelon's request is only related to the use of the Code Case N-879 material in pressure-boundary components as an alternative to the material requirements in subparagraphs NC/ND-2121(a) of the ASME Code, Section III. Therefore, the NRC staff focused its reviewed on the adequacy of the material for pressure-boundary components and not on the design of the fittings. However, the NRC staff notes that the successful testing of fittings made from the Code Case N-879 material, in accordance with Article NB-3000 of the ASME Code, Section III, shows that the design of the fittings is adequate and provides additional assurance that the material will perform adequately under design conditions.

The material specified in Code Case N-879 has not been assigned a P-Number in the ASME Code, Section IX, and is, therefore, identified as an unassigned metal. Subparagraph QW-424.1 of the ASME Code, Section IX, requires materials without a P-Number to be qualified individually. Enclosure 2 of the application included a typical welding procedure qualification record (PQR) from Lokring, which was produced during the qualification process for welding the fitting material to a P-No. 1 material (carbon steel, ASTM A106, Grade B) with no elevated preheat (70 °F minimum) or PWHT. There are no ASME Code, Section III, requirements for preheat or PWHT for the material specified in Code Case N-879 since the material has not been assigned a P-Number. The testing performed to support the Lokring PQR passed all ASME Code, Section IX, requirements. Exelon did not provide the welding procedure specification used to weld the test samples; however, the successfully completed Lokring PQR shows the welding compatibility of the fitting material with P-No. 1 materials.

Photomicrographs of two weld samples joining a Lokring half-body (made from material meeting Code Case N-879) to a 0.75 NPS carbon-steel elbow (ASME SA-234, Grade WPB) were provided in Enclosure 3 of the application. Although a written description of the microstructures in the photomicrographs was not provided, the NRC staff determined that the photomicrographs confirm that the microstructure of the base material (15V24), which meets Code Case N-879, is comprised of a fine-grain, ferrite-pearlite structure. A ferrite-pearlite structure is typical for low-carbon steels currently permitted for use by the ASME Code, Section III.

Enclosure 4 of the application provides microhardness testing results of the two weld samples and shows that the weld HAZ hardness is relatively low and is not appreciably harder than the unaffected Lokring half-body base material (15V24). In addition, the low HAZ hardness values confirm that no martensite is present, and, therefore, PWHT would not be beneficial. The NRC staff notes that PWHT of hot-worked, control-cooled, micro-alloy materials, such as 15V24, could potentially degrade the material properties substantially. The NRC staff finds that the absence of martensite, coupled with the satisfactory PQR testing results in Enclosure 2 of the application, show that the weldability of this material is acceptable and requires no elevated preheat or PWHT.

As discussed above, the NRC staff determined that the chemistry and resulting microstructure of the material specified in Code Case N-879 is comparable to and compatible with carbon-steel materials already permitted by the ASME Code. In addition, the material has good weldability, as confirmed by testing. The material has also been successfully used by Exelon in systems designed to ASME B31.1, and successfully used in other industries in various environments. Therefore, the NRC staff finds the use of the material specified in Code Case N-879 is acceptable under the conditions specified in Exelon's proposed alternative.

3.2.3 Duration of Proposed Alternative

In its April 30, 2019, letter, Exelon requested to use the proposed alternative for the remainder of the current 10-year ISI interval for each plant, as specified in Section 2 of the letter, and "for the remainder of the plant's life."

The regulations in 10 CFR 50.55a(z) allow the NRC staff to authorize alternatives to the requirements in paragraphs (b) through (h) of 10 CFR 50.55a. This regulation does not allow the NRC staff to approve alternatives to requirements not currently in these paragraphs. The staff does not generally approve alternatives to 10 CFR 50.55a and the ASME Code beyond the current inservice inspection or testing intervals, unless specific circumstances would justify a longer interval. The staff has approved alternatives for the next inservice inspection or testing

interval when it is near the end of the current interval and the applicable requirements for the next interval are known. For example, 10 CFR 50.55a(g)(4)(ii) requires, in part, that for subsequent ISI intervals the licensee use the latest edition and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(a) 12 months prior to the start of the 10-year ISI interval.

Exelon's October 16, 2019, letter provided a revised request which limited the duration of the proposed alternative to the remainder of the current 10-year ISI interval for each facility and the duration of the next 10-year ISI interval at Clinton (see SE Section 3.1.2). As the start of the next interval for Clinton will begin within 12 months of the authorization of this alternative, the applicable edition and addenda of the ASME Code are known. The NRC staff determined that the revised duration of the request is acceptable because the applicable edition and addenda of the ASME Code for each facility have been incorporated into 10 CFR 50.55a(a).

4.0 CONCLUSION

As set forth above, the NRC staff determined that the Exelon's proposed alternative to use ASME Code Case N-879, as described in its October 16, 2019, letter, will provide an acceptable level of quality and safety. Accordingly, the staff concludes that Exelon has adequately addressed the regulatory requirements set forth in 10 CFR 50.55a(z)(1). Therefore, the NRC staff authorizes Exelon to use the proposed alternative described in its application, as supplemented, at Braidwood, Byron, Calvert Cliffs, Clinton, LaSalle, Limerick, and NMP-2. This authorization is for the remainder of the current 10-year ISI interval for each of these facilities and for the fourth 10-year ISI interval at Clinton, as specified in Exelon's October 16, 2019, letter.

The NRC approval of this alternative does not imply or infer the NRC approval of the ASME Code Cases N-879 for generic use. All other ASME Code requirements for which relief was not been specifically requested and approved remain applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: R. Davis, NRR

Date: February 4, 2020

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; BYRON STATION, UNIT NOS. 1 AND 2; CALVERT CLIFFS NUCLEAR POWER PLANT, UNITS 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; LASALLE COUNTY STATION, UNITS 1 AND 2; LIMERICK GENERATING STATION, UNITS 1 AND 2; AND NINE MILE POINT NUCLEAR STATION, UNIT 2 — PROPOSED ALTERNATIVE TO USE ASME CODE CASE N-879 (EPID L-2019-LLR-0037) DATED FEBRUARY 4, 2020

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