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

March 29, 2012

Mr. Michael J. Pacilio
President and Chief Nuclear Officer
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2; BYRON STATION, UNIT NOS. 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3; LASALLE COUNTY STATION, UNITS 1 AND 2; LIMERICK GENERATING STATION, UNITS 1 AND 2; OYSTER CREEK NUCLEAR GENERATING STATION; PEACH BOTTOM ATOMIC POWER STATION, UNITS 2, AND 3; QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2; AND THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - REQUEST TO USE A LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE, SECTION XI, "RULES FOR INSERVICE INSPECTION OF NUCLEAR POWER PLANT COMPONENTS" (TAC NOS. ME7286, ME7287, ME7288, ME7289, ME7290, ME7291, ME7292, ME7293, ME7294, ME7295, ME7296, ME7297, ME7298, ME7299, ME7300, ME7301, ME7302)

Dear Mr. Pacilio:

By letter dated October 7, 2011 (Agencywide Document Access and Management System (ADAMS) Accession No. ML112800674), Exelon Generation Company, LLC, (Exelon), submitted a request to use a portion of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, "Rules for Inservice Inspection [ISI] of Nuclear Power Plant Components" at Braidwood Station, Units 1 and 2; Byron Station, Unit Nos. 1 and 2; Clinton Power Station, Unit No. 1; Dresden Nuclear Power Station, Units 2 and 3; LaSalle County Station, Units 1 and 2; Limerick Generating Station, Units 1 and 2; Oyster Creek Nuclear Generating Station; Peach Bottom Atomic Power Station, Units 2 and 3; Quad Cities Nuclear Power Station, Units 1 and 2; and Three Mile Island Nuclear Station, Unit 1.

Specifically, pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4)(iv), the licensee requested to use Mandatory Appendix 1,1-2600, "Appendix VIII Examination," from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code. Implementation of Mandatory Appendix I, 1-2600 from the 2007 Edition through 2008 Addenda will permit the use of Appendix VIII Performance Demonstration Initiative techniques to be used for components to which Appendix VIII is not applicable. The approval of the 2007 Edition through the 2008 Addenda of the ASME B&PV Code for use was announced in the *Federal Register* on June 21, 2011 (i.e., 76 FR 36232).

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation (SE), that Exelon has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv), and is in compliance with the ASME Code requirements. Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff authorizes use of Appendix I, I-2600 from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code, Section XI, for ultrasonic UT examinations for the remainder of the 10-year ISI intervals described in the enclosed SE. All other ASME Code, Section XI, requirements for which the request was not specified remains applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact Joel S. Wiebe, Senior Project Manager, at (301) 415 6606 or via e-mail at Joel.Wiebe@nrc.gov.

Sincerely,

Jacob I. Zimmerman, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-456, STN 50-457,
STN 50-454, STN 50-455, 50-461, 50-237,
50-249, 50-373, 50-374, 50-352, 50-353, 50-219,
50-277, 50-278, 50-254, 50-265, and 50-289

Enclosure:
Safety Evaluation

cc w/encl: Distribution via Listserv

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO USE A LATER EDITION OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS BOILER AND PRESSURE VESSEL CODE, SECTION XI, "RULES FOR INSERVICE INSPECTION OF NUCLEAR POWER PLANT COMPONENTS"

EXELON GENERATION COMPANY, LLC

BRAIDWOOD STATION, UNITS 1 AND 2; BYRON STATION, UNIT NOS. 1 AND 2; CLINTON POWER STATION, UNIT NO. 1; DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3; LASALLE COUNTY STATION, UNITS 1 AND 2; LIMERICK GENERATING STATION, UNITS 1 AND 2; OYSTER CREEK NUCLEAR GENERATING STATION; PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3; QUAD CITIES NUCLEAR POWER STATION, UNITS 1 AND 2; AND THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NOs. 50-456, 50-457, 50-454, 50-455, 50-461, 50-237, 50-249, 50-373, 50-374, 50-352, 50-353, 50-219, 50-277, 50-278, 50-254, 50-265, and 50-289

1.0 INTRODUCTION

By letter dated October 7, 2011 (Agencywide Document Access and Management System (ADAMS) Accession No. ML112800674), Exelon Generation Company, LLC. the licensee, submitted a request to use a portion of a later edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, "Rules for Inservice Inspection [ISI] of Nuclear Power Plant Components." Specifically, Exelon proposes to implement Mandatory Appendix I, I-2600, "Appendix VIII Examination," of the 2007 Edition through the 2008 Addenda of the ASME B&PV Code. Implementation of Mandatory Appendix I, I-2600 from the 2007 Edition through 2008 Addenda will permit the use of Appendix VIII Performance Demonstration Initiative (PDI) techniques to be used for components to which ASME B&PV Code, Section XI, Appendix VIII, is not applicable under their current ASME B&PV Code Editions.

2.0 REGULATORY EVALUATION

The regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g)(4) established the effective ASME Code edition and addenda to be used by licensees for

Enclosure

performing ISI of components and supports. The regulations require that inservice examination of components and system pressure tests conducted during the first 10-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) 12-months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein.

The inspection intervals and codes of record for each power plant covered in this request are given in Table 1.

In 10 CFR 50.55a(g)(4)(iv), it states that the inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to the conditions listed therein and U.S. Nuclear Regulatory Commission (NRC) approval. Portions of the editions or addenda may be used provided that all related requirements of the respective editions and addenda are met, subject to any conditions, and NRC approval. The NRC Regulatory Issue Summary 2004-12: "Clarification on Use of Later Editions and Addenda to the ASME OM Code and Section XI," provides additional guidance on the use of later additions and addenda of Section XI of the ASME Code.

3.0 TECHNICAL EVALUATION

3.1 Proposed Subsequent Code Edition and Addenda (or Portion):

Exelon is requesting the use of Mandatory Appendix I, Section I-2600 from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code, Section XI, for the remainder of the intervals specified in Section 3.3, below.

3.2. Related Requirements:

10 CFR 50.55a(g)(4)(iv) states:

"Inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (b) of this section, subject to the conditions listed in paragraph (b) of this section, and subject to Commission approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions or addenda are met."

10 CFR 50.55a(b)(2) incorporated by reference Section XI, Division 1, of the ASME B&PV Code, 2007 Edition through the 2008 Addenda. There are no conditions in 10 CFR 50.55a(b)(2) related to Mandatory Appendix I, I-2600 ("Appendix VIII Examination") for the 2007 though 2008 Addenda of ASME B&PV Code Section XI. In addition, the I-3000 Examination Coverage requirements listed in the ASME 2007 Edition with the 2008 Addenda will be utilized in conjunction with the components examined in accordance with I-2600.

3.3. Duration of Proposed Request:

The provision in the proposed request will be used for the remainder of the inservice inspection intervals specified in Table 1.

Table 1: Plants and Codes Covered Under Request

Plant	Interval	Edition	Start	End
Braidwood Station, Units 1 and 2	Third	2001 Edition, through 2003 Addenda	July 29, 2008 October 17, 2008	July 28, 2018, October 16, 2018
Byron Station, Unit Nos. 1 and 2	Third	2001 Edition, through 2003 Addenda	January 16, 2006	July 15, 2016
Clinton Power Station	Third	2004 Edition	July 1, 2010	June 30, 2020
Dresden Nuclear Power Station, Units 2 and 3	Fourth	1995 Edition, through 1996 Addenda	January 20, 2003	January 19, 2013
LaSalle County Station, Units 1 and 2	Third	2001 Edition, through 2003 Addenda	October 1, 2007	September 30, 2017
Limerick Generating Station, Units 1 and 2	Third	2001 Edition, through 2003 Addenda	February 1, 2007	January 31 , 2017
Oyster Creek Nuclear Generating Station	Fourth	1995 Edition, through 1996 Addenda	October 15, 2002	October 14, 2012
Peach Bottom Atomic Power Station, Units 2 and 3	Fourth	2001 Edition, through 2003 Addenda	November 5, 2008	November 4, 2018
Quad Cities Nuclear Power Station, Units 1 and 2	Fourth	1995 Edition, through 1996 Addenda	March 10, 2003	April 1, 2013
Three Mile Island Nuclear Station, Unit 1	Fourth	2004 Edition	April 20, 2011	April 19, 2022

3.4 NRC Staff Evaluation

Currently, ASME Section XI, IWA-2232 (for the editions identified in Table 1) requires that ultrasonic (UT) examinations be conducted in accordance with Mandatory Appendix I of the ASME B&PV Code. The plants identified in Table 1 are currently using versions of ASME B&PV Code Section XI, Mandatory Appendix I, paragraph I-2000 (for the editions identified in Table 1) that require the performance of UT examinations to be carried out in accordance with ASME Code, Section XI, Appendix VIII, or Section V, Article 4, without substitution.

In lieu of the versions of Mandatory Appendix I, I-2000 currently being used by the plants identified in Table 1 (for the editions identified in Table 1), Exelon requests the use of Mandatory Appendix I, I-2600 ("Appendix VIII Examination") from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code, Section XI. This provision states:

(a) For components to which Appendix VIII is not applicable, examination procedures, personnel, and equipment qualified in accordance with Appendix VIII may be applied, provided such components, materials, sizes, and shapes are within the scope of the qualified examination procedure.

(b) Examination coverage shall be in accordance with I-3000.

(c) No other I-1000 or I-2000 requirements apply.

Exelon will implement I-2600 from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code. This new provision permits the use of Appendix VIII PDI techniques for components to which Appendix VIII is not mandatory. The 2007 Edition through the 2008 Addenda of the ASME B&PV Code was approved for use in the *Federal Register* 76 FR 36232, dated June 21, 2011. The licensee would use the Appendix VIII requirements appropriate to their current Codes of Record as shown in Table 1.

With the exception of the UT examinations performed with Appendix VIII qualified procedures and personnel, UT examinations and other nondestructive examination (NDE) methods are performed using prescriptive techniques (e.g., Section XI Appendix III and Section V of the ASME Code). The NRC staff supports the use of performance-based NDE and continues monitoring, reviewing, and evaluating the adequacy of the transition to performance-based examinations and the appropriateness of selected performance-based criteria. The use of performance-based NDE methods provides confidence in the effectiveness and reliability of the examinations. The use of the rules in ASME B&PV Code, Section XI, Appendix VIII, to qualify UT procedures and personnel has resulted in an improvement in the effectiveness of ISI of nuclear power plant components. Increasing the number of ASME B&PV Code, Section XI, Appendix VIII-qualified examinations, as is the intent of the proposed request, would increase the effectiveness of the ISI programs at each power plant.

4.0 CONCLUSIONS

As set forth above, the NRC staff determines the licensee's request to use the later edition and addenda of ASME Code Section XI addresses all related requirements and associated conditions in 10 CFR 50.55a(b). Accordingly, the NRC staff concludes that the licensee has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv), and is in compliance with the ASME Code requirements. Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff authorizes the use of Appendix I, I-2600 from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code, Section XI, for UT examinations at the nuclear power plants specified in Table 1 for the remainder of the 10-year ISI intervals described in Table 1. All other ASME

Code, Section XI, requirements for which the request was not specified remains applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: Stephen Cumblidge

Date of Issuance: March 29, 2012

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the subject request and concludes, as set forth in the enclosed safety evaluation (SE), that Exelon has adequately addressed all of the regulatory requirements set forth in 10 CFR 50.55a(g)(4)(iv), and is in compliance with the ASME Code requirements. Therefore, pursuant to 10 CFR 50.55a(g)(4)(iv), the NRC staff authorizes use of Appendix I, I-2600 from the 2007 Edition through the 2008 Addenda of the ASME B&PV Code, Section XI, for ultrasonic UT examinations for the remainder of the 10-year ISI intervals described in the enclosed SE. All other ASME Code, Section XI, requirements for which the request was not specified remains applicable, including third-party review by the Authorized Nuclear Inservice Inspector.

If you have any questions, please contact Joel S. Wiebe, Senior Project Manager, at (301) 415 6606 or via e-mail at Joel.Wiebe@nrc.gov.

Sincerely,

/RA/

Jacob I. Zimmerman, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
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Docket Nos. STN 50-456, STN 50-457,
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Safety Evaluation

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