

September 7, 2006

Mr. Christopher M. Crane, President
and Chief Nuclear Officer
Exelon Generation Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNIT NOS. 1 AND 2 - EVALUATION OF INSERVICE
INSPECTION PROGRAM RELIEF REQUEST I3R-01 (TAC NOS. MD1209 AND
MD1210)

Dear Mr. Crane:

By letter to the Nuclear Regulatory Commission (NRC) dated November 8, 2005, Exelon Generation Company, LLC (the licensee) submitted relief request I3R-01 for approval of proposed alternatives to the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code), Section XI. Specifically, relief was sought to reduce the duration of the Byron Station (Byron), Unit No. 2, second inservice inspection (ISI) interval to create a common third ISI interval for Byron, Unit Nos. 1 and 2. In addition, relief was requested to reduce the first containment inservice inspection (CISI) interval for Byron, Unit Nos. 1 and 2, which will permit subsequent CISI interval dates to be synchronized with future ISI intervals for both units.

The NRC staff concludes, based on the enclosed safety evaluation, that **pursuant to Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a(a)(3)(i), the proposed alternatives to ASME Code, Section XI for ISI and CISI intervals are authorized for Byron.** The third 10-year ISI interval, and the second CISI intervals began January 16, 2006.

Sincerely,

/RA/

Daniel S. Collins, Chief
Plant Licensing Branch III-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. STN 50-454 and STN 50-455

Enclosure:
Safety Evaluation

cc w/encl: See next page

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Byron Station, Units 1 and 2

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO INSERVICE INSPECTION AND

CONTAINMENT INSERVICE INSPECTION INTERVALS

EXELON GENERATION COMPANY, LLC

BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. STN 50-454 AND STN 50-455

1.0 INTRODUCTION

By letter to the Nuclear Regulatory Commission (NRC, the Commission) dated November 8, 2005 (Agencywide Documents Access and Management System Accession Number ML053320209), Exelon Generation Company, LLC (the licensee) submitted relief request I3R-01 for approval of proposed alternatives to the American Society of Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (Code) Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." Specifically, relief was sought pursuant to Title 10 of the Code of Federal Regulations (10 CFR) Section 50.55a(a)(3)(i) to reduce the duration of the Byron Station (Byron), Unit No. 2, second inservice inspection (ISI) interval to create a common third ISI interval for Byron, Unit Nos. 1 and 2 as well as to reduce the first containment inservice inspection (CISI) interval for Byron, Unit Nos. 1 and 2, which will permit subsequent CISI interval dates to be synchronized with future ISI intervals for both units.

2.0 REGULATORY EVALUATION

10 CFR 50.55a(g) specifies that ISI of nuclear power plant components shall be performed in accordance with the requirements of the ASME Code, Section XI, except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). Section 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) "the proposed alternatives would provide an acceptable level of quality and safety" or (ii) "compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety." Section 50.55a(g)(5)(iii) states that "if the licensee has determined that conformance with certain code requirements is impractical for its facility, the licensee shall notify the Commission and submit, as specified in Section 50.4, information to support the determinations."

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

3.0 TECHNICAL EVALUATION

3.1 Components for Which Relief is Requested

All Class 1, 2, 3, MC and CC components

3.2 Applicable Code Edition and Addenda

The Code of record for the second 10-year ISI program at Byron is the ASME Code, Section XI, 1989 Edition with no Addenda. The Code of record for the first 10-year CISI program at Byron, Unit Nos. 1 and 2, is the ASME Code, Section XI, 1998 Edition with no Addenda. After modification of the 10-year interval dates as proposed, the Code of record will be the 2001 Edition through the 2003 Addenda of ASME Code, Section XI.

3.3 Applicable Code Requirement

ASME Code, Section XI, IWA-2432, "Inspection Program B" requires that each inspection interval consist of a 10-year duration, except as modified by IWA-2430(d) which permits the inspection interval to be reduced or extended by as much as 1 year, provided that successive intervals are not altered by more than 1 year from the original pattern of intervals.

3.4 Licensee Proposed Alternatives and Basis for Use

The licensee's proposed alternatives to the ASME Code, Section XI requirements consists of the following: (1) modify the interval dates of the Byron, Unit No. 2, second 10-year ISI interval, and (2) modify the interval dates of the Byron, Unit Nos. 1 and 2, first 10-year CISI interval. There is no modification for the 10-year ISI interval dates for Byron, Unit No. 1. The modification of the interval dates will result in a reduction of the second ISI interval for Byron, Unit No. 2 by about 1½ years and a reduction of about 2½ years for the duration of the first CISI interval for Byron, Unit Nos. 1 and 2. After the modification of the interval dates, the start date of the third ISI interval and the second CISI interval for Byron, Unit Nos. 1 and 2, was January 16, 2006. Based on that date, the Byron, Unit No. 1 fall 2006 refueling outage and the Byron, Unit No. 2 spring 2007 refueling outage will be the first refueling outages of the subject intervals. The modification of these interval dates will allow the use of the same ASME Code of record for the third interval ISI program and the second interval CISI program for Byron, Unit Nos. 1 and 2. The ASME Code of record will be the 2001 Edition through the 2003 Addenda of ASME Code, Section XI.

The licensee also stated that the rolling 5-year ASME Code subsection IWL, "Requirements for Class CC Concrete Components of Light-Water Cooled Plants," frequency will be maintained as currently scheduled, and the inspection will be performed in accordance with the ASME Code of record at the time of examination.

3.5 Staff Evaluation

In the subject relief request, the licensee proposed an alternative to the ASME Code, Section XI, IWA-2432 requirements. The proposed alternative will reduce the duration of the second 10-year ISI interval at Byron, Unit No. 2 by about 1½ years and the duration of the first 10-year CISI interval at Byron, Unit Nos. 1 and 2 by about 2½ years. However, the ASME Code only allows a 1-year change to the original pattern of the 10-year ISI interval. Therefore, to determine whether the proposed alternative will provide an acceptable level of quality and safety, the NRC staff's review focused on the proposed change of interval dates effect on the implementation of the ASME Code-required ISI.

Currently, Byron, Unit Nos. 1 and 2 have different 10-year ISI interval dates due to different commercial operating dates which may result in different governing ASME Code editions in subsequent ISI intervals which may require the implementation of different ASME Code requirements at each unit. In addition, the 10-year interval dates for CISI are different from that of the ISI because the CISI program was not implemented until September 9, 1996. The proposed alternative will synchronize the 10-year ISI interval between Byron, Unit Nos. 1 and 2 and align the 10-year CISI intervals with that of the synchronized ISI interval. This change will establish a common interval for both the ISI and CISI programs at Byron and allow the use of a common ASME Code of record. The ASME Code of record will be the 2001 Edition through the 2003 Addenda of ASME Code, Section XI. There are distinct advantages in implementing the same ASME Code requirements at both units in a common interval. The advantages include the reduction of the administrative burden of maintaining different sets of procedures and requirements and will result in a significant decrease in the chances of applying the wrong requirements.

The licensee also stated that any examinations that are unique to and specifically required in the remainder of the third period in the second interval at Byron, Unit No. 2 will be conducted in the first period of all subsequent ISI intervals, and will not be deferred to the end of the interval. Therefore, this method of scheduling will maintain the original sequence of examinations and will not affect the frequency of required examinations. For CISI, the licensee stated that the first and second periods of the first CISI interval have been completed as scheduled and no augmented examinations are required.

In the supplementary information contained in Section 2.2, "Section XI," of the Final Rule "Industry Codes and Standards; Amended Requirements" (67 FR 60520) dated September 26, 2002, the NRC stated that 10 CFR 50.55a(g)(4)(ii) does not prohibit licensees from updating to a later edition and addenda of the ASME Code midway through a 10-year ASME Code, Subsection IWE, "Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Plants" or 5-year ASME Code, Subsection IWL examination interval. Additionally, the staff advised that licensees wishing to synchronize their 120-month intervals may submit a request in accordance with 10 CFR 50.55a(a)(3) to obtain authorization to extend or reduce 120-month intervals.

4.0 CONCLUSION

Based on the information provided in the licensee's submittal, the NRC staff concludes that the licensee's proposed alternative to the requirements of ASME Code, Section XI, IWA-2432 is

acceptable because it will provide an acceptable level of quality and safety. The NRC staff has determined that the licensee's proposed alternative will make the implementation of the ISI and CISI programs at Byron more efficient and effective with no change to the frequency of required examinations. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i) the alternative is authorized for Byron, Unit Nos. 1 and 2. All other ASME Code, Section XI, requirements for which relief was not specifically requested and authorized herein by the NRC staff remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: W. Koo

Date: September 7, 2006