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January 15, 2008

Mr. Charles G. Pardee
Chief Nuclear Officer and Senior Vice President
AmerGen Energy Company, LLC
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: BYRON STATION, UNIT NOS. 1 AND 2 – INSERVICE INSPECTION
PROGRAM SECOND INTERVAL RELIEF REQUESTS I2R-22, I2R-23, I2R-25,
AND I2R-53 (TAC NOS. MD4099, MD4100, MD4101, MD4102, MD4103,
MD4104, MD4105, AND MD4106)

Dear Mr. Pardee:

By letter dated January 12, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML070120246), as supplemented by letter dated September 17, 2007 (ADAMS Accession No. ML072610587), Exelon Generation Company, LLC (the licensee), submitted Relief Requests (RRs) I2R-21, I2R-22, I2R-23, I2R-25, and I2R-53 for the second 10-year inservice inspection interval (ISI) at Byron Station, Unit Nos. 1 and 2 (Byron). These RR's were submitted due to the impracticality of satisfying the relevant requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for the specified ASME Code Class 1 and 2 components.

The Nuclear Regulatory Commission (NRC) has reviewed the licensee's analysis in support of its requests for relief. For RR's I2R-22, I2R-23, I2R-25, and I2R-53, the NRC determined that the relevant ASME Code, Section XI examination requirements are impractical for Byron and that the licensee's alternative examinations of the subject Class 1 and 2 components provide reasonable assurance of structural integrity. Therefore, RR's I2R-22, I2R-23, I2R-25, and I2R-53 are granted pursuant to 10 CFR 50.55a(g)(6)(i). However, although these requests for relief are granted, the RR's granted are retroactive for Byron's second 10-year ISI interval, which ended January 15, 2006.

Granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and approved, remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

C. Pardee

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The NRC staff is still in the process of reviewing the information in RR I2R-21, which was also provided by the licensee in its letter dated January 12, 2007.

Sincerely,

/RA/

Russell Gibbs, 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

C. Pardee

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The NRC staff is still in the process of reviewing the information in RR 12R-21, which was also provided by the licensee in its letter dated January 12, 2007

Sincerely,

/RA/

Russell Gibbs, 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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Enclosure

RELIEF FROM INSERVICE INSPECTION PROGRAM SECOND INTERVAL

REQUESTS FOR RELIEF I2R-22, I2R-23, I2R-25, AND I2R-53

EXELON GENERATION COMPANY, LLC

BYRON STATION, UNIT NOS. 1 AND 2

DOCKET NOS. 50-454 AND 50-455

1.0 INTRODUCTION

By letter dated January 12, 2007 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML070120246), as supplemented by letter dated September 17, 2007 (ADAMS Accession No. ML072610587), Exelon Generation Company, LLC (the licensee) submitted Relief Request (RR) Nos. I2R-22, I2R-23, I2R-25, and I2R-53 for the Byron, Units 1 and 2 (Byron) second 10-year inservice inspection interval (ISI) program. In its submittal, the licensee requested relief from certain examination requirements of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code), Section XI, for several ASME Code Class 1 and 2 components.

2.0 REGULATORY EVALUATION

Inservice Inspection of ASME Code Class 1, 2, and 3 components is performed in accordance with Section XI of the ASME Code and applicable addenda as required by Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a(g), except where specific relief has been granted by the Nuclear Regulatory Commission (NRC) pursuant to 10 CFR 50.55a(g)(6)(i). Section 50.55a(a)(3) of 10 CFR 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.

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 the pre-service 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 regulation requires 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) twelve months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable Code of Record for the

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second 10-year interval ISI program at Byron is the 1989 Edition of the ASME Code, Section XI, without addenda. The second 10-year interval ISI program at Byron ended on January 15, 2006.

3.0 TECHNICAL EVALUATION

3.1 RR 12R-22

3.1.1 Component Identification

In RR 12R-22, the licensee requested relief from the ASME Code, Section XI examination requirements for the following integrally welded attachments to piping in containment and auxiliary building penetrations at Byron:

<u>Penetration Number</u>	<u>Weld Number</u>
1PC-7	C10A
1PC-14	C11A
1PC-68	C03
1PC-50	C01A
1AB-64	C20
2PC-7	C01A
2PC-14	C10A
2PC-66	C02
2AB-128	C49
2PC-50	C02
2PC-100	C04
2AB-36	C47

3.1.2 ASME Code, Section XI Requirements

These Class 2 integrally welded attachments are subject to the examination requirements of the ASME Code, Section XI, Table IWC-2500-1, Examination Category C-C, Item Number C3.20. The 1989 Edition of the ASME Code, Section XI, Table IWC-2500-1, Examination Category C-C, Item Number C3.20, requires surface examinations for welded attachments to piping. The required examination area is specified in Figure IWC-2500-5.

3.1.3 Licensee's Code RR

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from performing the required surface examinations of inaccessible regions on the subject welded attachments, specifically the integral attachment welds located inside the penetration assembly. Relief was requested for the second ISI interval at Byron.

3.1.4 NRC Staff Evaluation

The ASME Code, Section XI, requires a 100 percent surface examination of the subject welded piping attachments, however, portions of these welded attachments are located inside the piping penetrations. The piping penetrations restrict access to the inner portions of these welded attachments. The inner portion of the weld is set back a considerable distance inside

the penetration assembly, and the clearance between the pipe and penetration sleeve is small. Therefore, the 100 percent surface examination coverage of these welded attachments required by the ASME Code, Section XI, is impractical to achieve. In order to achieve the ASME Code-required examination coverage, significant redesign of the piping penetration assembly to facilitate access to the inner portions of the welds would be required. Therefore, imposition of the ASME Code requirements for full surface examination coverage of these welds would result in a considerable burden on the licensee.

The licensee has examined the subject welds to the extent practical. When a weld was scheduled for inspection, a surface examination of the accessible portion of the weld on the exposed outside surface of the penetration was performed. In addition to the limited examination coverage, the licensee has performed periodic visual examinations in VT-2 accordance with the requirements of the ASME Code, Section XI, Examination Category C-H. The licensee indicated that these examinations will provide reasonable assurance of continued structural integrity for these welded attachments.

The NRC staff noted that RR I2R-22 did not specify the percentage of credible surface examination coverage that was achieved on the accessible outside surface of the welded attachments. The NRC staff requested clarification of this and other issues in a request for additional information (RAI) issued by letter dated August 17, 2007 (ADAMS Accession No. ML072270701). In RAI question 1 on I2R-22 (RAI I2R-22-1), the NRC staff requested that the licensee indicate the percentage of credible surface examination coverage that was achieved for the examination of the accessible portions of the welded attachments located on the exposed outside surface of the containment penetration. In its September 17, 2007, RAI response, the licensee indicated that the percentage of surface examination coverage achieved for the examination of the accessible welds on the exterior surfaces of the penetration assemblies was essentially 100 percent. The NRC staff found that this response adequately resolved RAI I2R-22-1, because the licensee stated that they had achieved essentially 100 percent coverage of the accessible exterior surfaces of the welded attachments.

In RAI I2R-22-2, the NRC staff requested that the licensee discuss whether the limited scope surface examination of the subject welded attachments provided any indication of the presence of flaws or other relevant conditions that were determined to be unacceptable according to the acceptance criteria of the ASME Code, Section XI, Article IWC-3000. In its response to RAI I2R-22-2, the licensee stated that none of the limited scope surface examinations of the subject welded attachments provided any recordable indications during the second ISI interval. The NRC staff found that this response adequately resolved RAI I2R-22-2 because no recordable indications (i.e., flaws) were found in these welded attachments during the second ISI interval.

Based on the information provided by the licensee in its submittal for RR I2R-22 and its RAI responses, the NRC staff found that the full examinations of the accessible exterior surfaces of these welded attachments and VT-2 visual examinations provide reasonable assurance of continued structural integrity of the subject welded attachments because any significant patterns of degradation would be detected by these examinations.

Based on the above considerations, the NRC staff determined that the ASME Code, Section XI, requirement to perform surface examinations of the subject welded piping attachments, with essentially 100 percent coverage of the examination surface specified in Figure IWC-2500-5 of the ASME Code, Section XI, is impractical for Byron. The full examination coverage of the

accessible exterior surfaces of these welded attachments and VT-2 visual examinations provide reasonable assurance of continued structural integrity for the subject welded attachments at Byron.

3.2 RR 12R-23

3.2.1 Component Identification

In RR 12R-23, the licensee requested relief from the ASME Code, Section XI examination requirements for the pressurizer nozzle-to-vessel welds for nozzle numbers PN-02, PN-03, PN-04, PN-05, and PN-06 at Byron.

3.2.2 ASME Code, Section XI Requirements

The pressurizer nozzle-to-vessel welds are subject to the examination requirements of the ASME Code, Section XI, Table IWB-2500-1, Examination Category B-D, Item Number B3.110. The 1989 Edition of the ASME Code, Section XI, Table IWB-2500-1, Examination Category B-D, Item Number B3.110, requires volumetric examinations for these Class 1 welds. The required examination volume is specified in Figure IWB-2500-7(b).

3.2.3 Licensee's Code RR

Pursuant to 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code, Section XI requirements for performing a full volumetric examination of the region specified in Figure IWB-2500-7(b) of the ASME Code, Section XI, for the subject pressurizer nozzle-to-vessel welds for the second ISI interval at Byron. The geometry and materials of construction of the subject pressurizer nozzles resulted in limited access to the entire examination volume.

3.2.4 NRC Staff Evaluation

The ASME Code, Section XI, requires essentially 100 percent volumetric coverage of the examination volume specified in Figure IWB-2500-7(b) for the pressurizer nozzle-to-vessel welds. This examination volume includes the actual weld, as well as the adjacent base metal on either side of the weld extending to a distance of one-half the thickness of the vessel wall from the extremities of the weld crown. The geometry of the subject pressurizer nozzles and the presence of vessel cladding resulted in limited access to the entire examination volume. Ultrasonic scans of the examination volume from the nozzle side of the weld were limited due to the geometry of the nozzle relative to the available transducer sizes. Specifically, the nozzle geometry resulted in a reduced scanning surface for the available transducer sizes on the nozzle side of the weld. Furthermore, the stainless steel cladding at the inner surface of the pressurizer vessel resulted in significant scattering of reflected ultrasound energy from the clad-weld interface. These two factors resulted in limited examination coverage from the four orthogonal scan directions that are required by the ASME Code, Section V, for ultrasonic scans of these welds and the two orthogonal scan directions required for the adjacent base metal. Conformance with the ASME Code, Section XI requirements for essentially 100 percent volumetric examination coverage would require extensive structural modifications to the pressurizer vessel. These examinations are therefore, impractical to perform to the extent required by the ASME Code, Section XI.

The licensee calculated the overall examination coverage that was achieved for both the weld and the adjacent base metal for each of the subject nozzle-to-vessel welds. This overall examination coverage was calculated by averaging the examination coverage percentages for each of the ASME Code-required scan directions at each beam angle. The licensee conducted a total of nine scans covering each of the scan directions and beam angles required by the ASME Code, Section V, for the weld portion of the examination volume and a total of seven scans for the base metal portion of the examination volume. The table below shows the average volumetric examination coverage that was achieved for each of the subject nozzle-to-vessel welds.

Nozzle Number	Unit 1 Percentage Examined Weld / Base Metal	Unit 2 Percentage Examined Weld / Base Metal
PN-02	77.8% / 64.4%	62.3% / 62.3%
PN-03	77.8% / 65.2%	66.3% / 66.3%
PN-04	66.3% / 66.3%	62.3% / 62.3%
PN-05	77.8% / 65.2%	66.3% / 66.3%
PN-06	77.8% / 65.2%	66.3% / 66.3%

For all of the subject nozzle-to-vessel welds, the licensee was able to obtain examination coverages that exceeded 60 percent of the examination volume required by the ASME Code, Section XI, for both the weld and the base metal. In addition to these limited volumetric examinations, the licensee has performed periodic VT-2 visual examinations in accordance with the requirements of the ASME Code, Section XI, Examination Category B-P. The licensee indicated that these examinations provide reasonable assurance of continued structural integrity of the subject nozzle-to-vessel welds.

In RAI I2R-23-1, the NRC staff requested that the licensee discuss whether the limited scope volumetric examinations of the subject welds provided any indication of the presence of flaws or other relevant conditions that were determined to be unacceptable according to the acceptance criteria of the ASME Code, Section XI, Article IWB-3000. In its response to RAI I2R-23-1, the licensee stated that none of the limited scope volumetric examinations of the subject welds provided any recordable indications during the second ISI interval. The NRC staff found that this response adequately resolved RAI I2R-23-1 because no recordable indications (i.e., flaws) were found in these welds during the second ISI interval. Therefore, based on the information provided by the licensee in its submittal for I2R-23 and its RAI response, the NRC staff determined that the limited scope volumetric examinations and VT-2 visual examinations provide reasonable assurance of continued structural integrity of the subject nozzle-to-vessel welds because any significant patterns of degradation would be detected by these examinations.

Based on the above considerations, the NRC staff determined that the ASME Code, Section XI, requirement to perform volumetric examinations of the pressurizer nozzle-to-vessel welds, with essentially 100 percent coverage of the examination volume specified in Figure IWB-2500-7(b) of the ASME Code, Section XI, is impractical for Byron. The limited scope volumetric examinations and VT-2 visual examinations provide reasonable assurance of continued structural integrity for the subject pressurizer nozzle-to-vessel welds at Byron.

3.3 RR 12R-25

3.3.1 Component Identification

In RR 12R-25, the licensee requested relief from the ASME Code, Section XI examination requirements for the reactor vessel (RV) head-to-flange weld (Weld No. RVHC-01) at Byron.

3.3.2 ASME Code, Section XI Requirements

This RV head-to-flange weld is subject to the examination requirements of the ASME Code, Section XI, Table IWB-2500-1, Examination Category B-A, Item Number B1.40. The 1989 Edition of the ASME Code, Section XI, Table IWB-2500-1, Examination Category B-A, Item Number B1.40, requires volumetric and surface examinations for this Class 1 weld. The required examination region for the volumetric and surface exams is specified in Figure IWB-2500-5.

3.3.3 Licensee's Code RR

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code, Section XI requirements for performing a full (essentially 100 percent) volumetric examination of the region specified in Figure IWB-2500-5 of the ASME Code, Section XI, for the RV head-to-flange weld at Byron. Relief was requested for the second ISI interval at Byron. The geometry and materials of construction of the RV head-to-flange weld result in limited access to the entire examination volume.

3.3.4 NRC Staff Evaluation

The ASME Code, Section XI, requires essentially 100 percent volumetric coverage of the examination volume specified in Figure IWB-2500-5 for the RV head-to-flange weld at Byron. This examination volume includes the actual weld, as well as the adjacent base metal on either side of the weld extending to a distance of one-half the thickness of the vessel wall from the extremities of the weld crown. The ASME Code, Section XI, also requires essentially 100 percent surface examination coverage of the examination area specified in Figure IWB-2500-5. The licensee has requested relief from the requirements for full volumetric examination coverage. This RR does not apply to the requirements for full surface examination coverage. Figures supplied by the licensee demonstrate that the surface geometry of the flange, in conjunction with access restrictions caused by the lifting lugs located on the RV head, preclude complete coverage of the full examination volume in the four required scan directions mandated by the ASME Code, Section V. Therefore, the limitation in the examination coverage was inherent in the design of RV head and flange. Conformance with the ASME Code, Section XI requirements for essentially 100 percent volumetric examination coverage would require extensive structural modifications to the RV head and flange. These examinations are therefore, impractical to perform to the extent required by the ASME Code, Section XI.

The licensee's limited scope volumetric examination was able to achieve 73 percent coverage of the Code-required examination volume specified in Figure IWB-2500-5 for the RV head-to-flange weld at Byron. The licensee's surface examination achieved 100 percent coverage of the examination area specified in Figure IWB-2500-5 for this weld at Byron. In addition, the licensee performs VT-2 visual examinations every refueling outage. The licensee

also indicated that past preservice and first ISI interval examinations revealed no recordable indications. The licensee indicated that these examinations provide reasonable assurance of continued structural integrity for the RV head-to-flange weld at Byron.

In RAI I2R-25-1, the NRC staff requested that the licensee discuss whether the limited scope volumetric examination and full scope surface examination of the subject weld provided any indication of the presence of flaws or other relevant conditions that were determined to be unacceptable according to the acceptance criteria of the ASME Code, Section XI, Article IWB-3000, during the second ISI interval. In its response to RAI I2R-25-1, the licensee stated that the limited scope volumetric examination of the subject weld did not provide any recordable indications during the second ISI interval at Byron. The NRC staff found that this response adequately resolved RAI I2R-25-1 because no recordable indications (i.e., flaws) were found in this weld during the second ISI interval at Byron. Therefore, based on the information provided by the licensee in its submittal for RR I2R-25 and its RAI response, the NRC staff found that the limited scope volumetric examination, full scope surface examination, and VT-2 visual examinations provide reasonable assurance of continued structural integrity for the subject weld because any significant patterns of degradation would be detected by these examinations.

Based on the above considerations, the NRC staff determined that the ASME Code, Section XI, requirement to perform the volumetric examination of the RV head-to-flange weld, with essentially 100 percent coverage of the examination volume specified in Figure IWB-2500-5 of the ASME Code, Section XI, is impractical for Byron. The limited scope volumetric examination, full scope surface examination, and VT-2 visual examinations provide reasonable assurance of continued structural integrity for the RV head-to-flange weld at Byron.

3.4 RR 12R-53

3.4.1 Component Identification

In RR I2R-53, the licensee requested relief from the ASME Code, Section XI examination requirements for the residual heat removal heat exchanger (RHRHX) shell-to-flange weld (Weld No. RHEC-01) at Byron.

3.4.2 ASME Code, Section XI Requirements

This RHRHX shell-to-flange weld is subject to the examination requirements of the ASME Code, Section XI, Table IWC-2500-1, Examination Category C-A, Item Number C1.10. The 1989 Edition of the ASME Code, Section XI, Table IWC-2500-1, Examination Category C-A, Item Number C1.10, requires a volumetric examination for this Class 2 weld. The required examination volume is specified in Figure IWC-2500-1.

3.4.3 Licensee's Code RR

In accordance with 10 CFR 50.55a(g)(5)(iii), the licensee requested relief from the ASME Code, Section XI requirements for performing a full (essentially 100 percent) volumetric examination of the region specified in Figure IWC-2500-1 of the ASME Code, Section XI, for the RHRHX shell-to-flange weld at Byron. Relief was requested for the second ISI interval at Byron. The geometry and materials of construction of the RHRHX shell-to-flange weld results in limited access to the entire examination volume.

3.4.4 NRC Staff Evaluation

The ASME Code, Section XI, requires essentially 100 percent volumetric coverage of the examination volume specified in Figure IWC-2500-1 for the RHRHX shell-to-flange weld at Byron. This examination volume includes the actual weld, as well as the adjacent base metal on either side of the weld extending to a distance of one-half inch from the extremities of the weld crown at the outside surface of the heat exchanger shell. The licensee conducted a volumetric examination of the RHRHX shell-to-flange weld by conducting ultrasonic scans of the accessible regions using procedures and personnel qualified in accordance with the ASME Code, Section XI, Appendix III. The licensee conducted these examinations using two qualified ultrasonic transducers, scanning in four directions to the extent practical. By using these techniques, the licensee was able to obtain an overall coverage of 71.75 percent of the ASME Code, Section XI-required examination volume. The limitation in examination coverage was attributed to the geometry of the RHRHX flange, which restricted access for scanning. Conformance with the ASME Code, Section XI requirements for essentially 100 percent volumetric examination coverage would require extensive structural modifications to the RHRHX flange. This would impose a significant burden on the licensee. These examinations are therefore, impractical to perform to the extent required by the ASME Code, Section XI.

In addition to the limited scope volumetric examination of the subject weld, the licensee performs VT-2 visual examinations every inspection period in accordance with the requirements of the ASME Code, Section XI, Examination Category C-H. The licensee indicated that the limited scope volumetric examination and VT-2 visual examinations provide reasonable assurance of continued structural integrity for the RHRHX shell-to-flange weld at Byron.

In RAI I2R-53-1, the NRC staff requested that the licensee discuss whether the limited scope volumetric examination of the subject weld provided any indication of the presence of flaws or other relevant conditions that were determined to be unacceptable according to the acceptance criteria of the ASME Code, Section XI, Article IWC-3000. In its response to RAI I2R-53-1, the licensee stated that the limited scope volumetric examination of the subject weld at Byron, Unit No.1 revealed the presence of a small subsurface planar flaw. The parameters of this flaw were evaluated according to the acceptance criteria of the ASME Code, Section XI, Article IWC-3000, and found to meet the acceptance standard. The licensee also indicated that this flaw was recently examined a second time during the beginning of the third ISI interval, and no change in the dimensions of the flaw was detected. The licensee stated that no recordable indications were found in this weld during the second ISI interval at Byron Unit No. 2. The NRC staff found that this response adequately resolved RAI I2R-53-1 because the one flaw that was found in the subject weld at Byron, Unit No. 1, during the second ISI interval, was found to meet the acceptance criteria of the ASME Code, Section XI, Article IWC-3000, and the most recent examination of this flaw revealed that its dimensions have not changed.

In RAI I2R-53-2, the NRC staff requested that the licensee discuss the extent to which the RHRHX head-to-flange weld was examined during the first ISI interval and the preservice examination, including the percentage of credible surface examination coverage that was achieved during these previous examinations. The NRC staff also requested that the licensee discuss any relevant conditions that were found during these previous examinations. In its response to RAI I2R-53-2, the licensee indicated that the preservice and first ISI interval examinations were performed prior to the adoption of ASME Code Case N-460 and consequently, do not have documented coverage percentages. However, the licensee stated

that although coverage percentages for these examinations were not documented, the coverage percentages obtained were likely similar to the 71.75 percent coverage obtained during the second ISI interval. This is based on the ultrasonic examination techniques for this weld remaining essentially unchanged from the preservice examination through the second ISI interval. With respect to examination findings, the licensee stated that no relevant indications were found in this weld during the preservice and first ISI interval examinations at Byron, Unit No. 1. At Byron, Unit No. 2, an unacceptable flaw was found in this weld during the preservice examination. The flaw area was repaired and reexamined, and no relevant indications were detected in the area of the repair. No relevant indications were found in this weld at Byron, Unit No. 2 during the first ISI interval. The NRC staff found that this response resolved RAI I2R-53-2 because the licensee provided the requested information regarding the examination history of the RHRHX shell-to-flange weld at Byron.

Based on the information provided by the licensee in its submittal for RR I2R-53 and its RAI responses, the NRC staff found that the limited scope volumetric examination and VT-2 visual examinations provide reasonable assurance of continued structural integrity of the subject weld at Byron because any significant patterns of degradation would be detected by these examinations.

Based on the above considerations, the NRC staff determined that the ASME Code, Section XI requirement to perform a volumetric examination of the specified RHRHX shell-to-flange weld, with essentially 100 percent coverage of the examination volume specified in Figure IWC-2500-1 of the ASME Code, Section XI, is impractical for Byron. The licensee's reduced examination volume coverage and VT-2 visual examinations provide reasonable assurance of structural integrity for the RHRHX shell-to-flange weld at Byron.

4.0 CONCLUSION

Based on the above evaluation of RRs I2R-22, I2R-23, I2R-25, and I2R-53, the NRC staff concludes that the applicable ASME Code, Section XI requirements are impractical for Byron, Unit Nos. 1 and 2. Furthermore, the NRC staff concludes that the licensee's alternative examinations provide reasonable assurance of structural integrity for the subject Class 1 and 2 components. Therefore, RRs I2R-22, I2R-23, I2R-25, and I2R-53 are granted pursuant to 10 CFR 50.55a(g)(6)(i). However, although these requests for relief are granted, the RRs granted are retroactive for Byron's second 10-year ISI interval, which ended January 15, 2006.

Granting relief pursuant to 10 CFR 50.55a(g)(6)(i) is authorized by law and will not endanger life or property or the common defense and security, and is otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility. All other requirements of the ASME Code, Section XI, for which relief has not been specifically requested and approved, remain applicable, including third party review by the Authorized Nuclear Inservice Inspector.

Principal Contributor: C. Syndor, NRR

Date: January 15, 20087