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10 CFR 50.55a

May 4, 2004

SVPLTR: #04-0025

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, D.C. 20555-0001

Dresden Nuclear Power Station, Unit 2  
Facility Operating License Nos. DPR-19  
NRC Docket Nos. 50-237

Subject: Relief Request CR-27, Inservice Inspection Program Relief Regarding Reactor Pressure Vessel Longitudinal Shell Weld Examination Coverage for Third 10-Year Inservice Inspection Interval

Reference: 1) Letter from A. J. Mendiola (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Dresden – Authorization for Proposed Alternative Reactor Pressure Vessel Circumferential Weld Examinations (TAC Nos. MA6228 and MA6229)," dated February 25, 2000

2) Letter from L. W. Rossbach (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Exemption from the Requirements of 10 CFR 50.55a(g)(6)(ii)(A)(2), Inservice Examination of the Reactor Pressure Vessel," dated September 28, 2001

In accordance with 10 CFR 50.55a, "Codes and standards," paragraphs (a)(3)(i) and (g)(6)(ii)(A)(5), Dresden Nuclear Power Station (DNPS) is requesting relief from American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," and the augmented examinations specified in 10 CFR 50.55a(g)(6)(ii)(A)(2) on the basis that the proposed alternative provides an acceptable level of quality and safety.

In Reference 1, the NRC approved an alternative reactor pressure vessel (RPV) weld examination pursuant to the provisions of 10 CFR 50.55a paragraphs (a)(3)(i) and (g)(6)(ii)(A)(5) for DNPS Units 2 and 3. The alternative allows permanent deferral of requirements to perform a volumetric examination of RPV circumferential shell welds for the remaining terms of the DNPS Units 2 and 3 operating licenses. The approved alternative requires inspections of essentially 100 percent of all longitudinal welds, and inspections of approximately 2 to 3 percent of the circumferential welds at their points of intersection with the longitudinal welds.

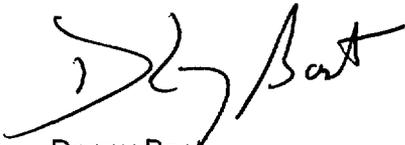
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May 4, 2004  
U.S. Nuclear Regulatory Commission  
Page 2

DNPS is submitting the attached relief request for those Unit 2 ASME Section XI RPV longitudinal shell weld examinations where the inspection coverage achieved was less than or equal to 90%. Specifically, this includes volumetric examination of RPV longitudinal shell welds examinations completed during the Third 10-Year Inservice Inspection Interval. The Third 10-Year Inservice Inspection Interval began on March 1, 1992, and ended on September 30, 2003. RPV longitudinal shell weld examinations were completed during the Unit 2 refueling outage, which began on October 14, 2003, and was completed on November 11, 2003. Approval to delay RPV longitudinal shell weld examinations was provided by the NRC in Reference 2.

Should you have any questions concerning his letter, please contact Mr. Jeff Hansen at (815) 416-2800.

Respectfully,

A handwritten signature in black ink, appearing to read 'D. Bost', written over a horizontal line.

Danny Bost  
Site Vice President  
Dresden Nuclear Power Station

Attachment: 10 CFR 50.55a Request Number CR-27

cc: Regional Administrator – NRC Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station

**ATTACHMENT**  
**10 CFR 50.55a Request Number CR-27**  
**Relief Requested**  
**In Accordance with 10 CFR 50.55a(g)(6)(ii)(A)(5) and 10 CFR 50.55a(a)(3)(i)**  
**Page 1 of 4**

**ASME Code Components Affected**

Components affected are American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (Code), Section XI, Class 1 pressure retaining reactor pressure vessel (RPV) longitudinal shell welds, Examination Category B-A, Item No. B1.12. Components are listed in Table CR-27.1.

**Applicable Code Edition and Addenda**

The applicable ASME Code, Section XI, for Dresden Nuclear Power Station (DNPS), Unit 2 Third 10-Year Inservice Inspection Interval is the 1989 Edition.

**Applicable Code Requirement**

In accordance with the provisions of 10 CFR 50.55a, "Codes and standards," paragraphs (a)(3)(i) and (g)(6)(ii)(A)(5), Exelon Generation Company, LLC (EGC) requests relief for DNPS, Unit 2 from the requirements of the augmented examinations specified in 10 CFR 50.55a(g)(6)(ii)(A)(2), which was used as a substitute for the reactor vessel shell weld examination scheduled for the third Inspection Interval as allowed by 10 CFR 50.55a(g)(6)(ii)(A)(2).

Augmented RPV examinations specified in 10 CFR 50.55a(g)(6)(ii)(A)(2) are subject to the conditions specified in 10 CFR 50.55a(g)(6)(ii)(A)(4) where examination of the reactor vessel may be satisfied by an examination of essentially 100% of the reactor vessel shell welds.

**Determination of Limits of Weld Volume Examination**

DNPS Unit 2 obtained Construction Permit CPPR-18 on January 10, 1966. The RPV was designed and fabricated before the examination requirements of ASME Section XI were formalized and published. Since this plant was not specifically designed to meet the requirements of ASME Section XI, full compliance is not feasible or practical within the limits of the current plant design.

The RPV is examined from the internal surface to the extent practical. Further examination from the inside surface is not practical without disassembly of vessel internal components. The exterior vessel surface is covered with permanent insulation located in close proximity to the RPV outside surface. The lower exterior vessel surface is also covered with a structural steel biological shield wall. Supplemental manual examinations from the outside surface are not practical due to the biological shield wall, insulation, and dose considerations.

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**Page 2 of 4**

**Proposed Alternative and Basis for Use**

Proposed Alternative

In accordance with 10 CFR 50.55a(a)(3)(i), and (g)(6)(ii)(A)(5), EGC proposes the following alternate provisions for the subject weld examinations since the proposed alternative provides an acceptable level of quality and safety.

The examination requirements specified in 10 CFR 50.55a(g)(6)(ii)(A)(2) for the RPV longitudinal shell welds shall be performed, to the extent possible. When this examination is performed, welds are examined from inside surfaces of the RPV using an automated ultrasonic inspection system, which provides the best possible examination of the RPV longitudinal shell welds. Additionally, a VT-2 examination is performed on the RPV during the system leakage test per examination category B-P each refueling outage.

Basis For Use

The RPV longitudinal shell welds are ultrasonically examined utilizing a Performance Demonstration Initiative (PDI) qualified automated ultrasonic inspection system meeting the requirements of ASME Section XI, Appendix VIII.

All components received examination(s) to the extent practical due to the limited or lack of access. The examinations conducted, confirmed satisfactory results evidencing no unacceptable flaws present, even though "essentially 100%" coverage was not attained.

Based on the above, with our earlier design, the underlying objectives of the code required volumetric examinations have been met. The examinations were completed to the extent practical and evidenced no unacceptable flaws present. Additionally, a VT-2 examination performed during the system leakage test per examination category B-P each refueling outage provides additional assurance that the structural integrity of the RPV is maintained.

**Duration of Proposed Alternative**

Relief is requested for the Third 10-Year Inservice Inspection Interval of the Inservice Inspection Program for DNPS Unit 2.

**Precedents**

The NRC has previously approved similar relief for Quad Cities Nuclear Power Station, Units 1 and 2. The NRC granted relief for Quad Cities Nuclear Power Station in Reference 1.

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**In Accordance with 10 CFR 50.55a(g)(6)(ii)(A)(5) and 10 CFR 50.55a(a)(3)(i)**  
**Page 3 of 4**

**References**

1. Letter from S. A. Richards (U. S. NRC) to O. D. Kingsley (Exelon Generation Company, LLC), "Alternative to 10 CFR 50.55a(g)(6)(ii)(A) Augmented Reactor Pressure Vessel Examination for Quad Cities Nuclear Plant, Units 1 and 2 (TAC Nos. M97370 and M99659)," dated October 23, 1998.

**ATTACHMENT**  
**10 CFR 50.55a Request Number CR-27**  
**Relief Requested**  
**In Accordance with 10 CFR 50.55a(g)(6)(ii)(A)(5) and 10 CFR 50.55a(a)(3)(i)**  
**Page 4 of 4**

**TABLE CR-27.1**

**UNIT 2 RPV LONGITUDINAL SHELL WELDS**

<b>Weld Identification</b>	<b>Weld Description</b>	<b>Relief Requested (Based on 90% Coverage)</b>	<b>Condition Limiting Coverage</b>	<b>Coverage Percent</b>
SC1A	Shell Course 1 Weld at 77 deg.	Yes	Jet Pump Diffuser and Baffle Plate	88
SC1B	Shell Course 1 Weld at 110 deg.	Yes	Core Shroud Repair Tie Rod	35
SC1C	Shell Course 1 Weld at 197 deg.	Yes	Jet Pump Diffuser, Diffuser Support Pads, Recirculation Nozzle, Core Shroud Repair Tie Rod	38
SC1D	Shell Course 1 Weld at 317 deg.	Yes	Jet Pump Diffuser and Baffle Plate	86
SC2A	Shell Course 2 Weld at 98 deg.	Yes	Jet Pump Riser Brace, Surveillance Specimen Support Bracket, Core Shroud Repair Tie Rod	72
SC2B	Shell Course 2 Weld at 218 deg.	Yes	Jet Pump Riser Brace, Surveillance Specimen Support Bracket	76
SC2C	Shell Course 2 Weld at 250 deg.	Yes	Jet Pump Riser Brace, Surveillance Specimen Support Bracket	83
SC2D	Shell Course 2 Weld at 338 deg.	No	None	100
SC3A	Shell Course 3 Weld at 77 deg.	Yes	Core Spray and Feedwater Spargers	76
SC3B	Shell Course 3 Weld at 197 deg.	Yes	Core Spray and Feedwater Spargers	77
SC3C	Shell Course 3 Weld at 296 deg.	Yes	Core Spray and Feedwater Spargers	78
SC3D	Shell Course 3 Weld at 317 deg.	Yes	Core Spray and Feedwater Spargers	83
SC3E	Shell Course 3 Weld at 353 deg.	Yes	Core Spray and Feedwater Spargers, Guide Rod	83
SC4A	Shell Course 4 Weld at 99 deg.	No	None	100
SC4B	Shell Course 4 Weld at 150 deg.	No	None	100
SC4C	Shell Course 4 Weld at 210 deg.	Yes	Steam Dryer Support Bracket	88
SC4D	Shell Course 4 Weld at 330 deg.	No	None	100
SC4E	Shell Course 4 Weld at 339 deg.	No	None	100