

September 3, 2004

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Stop P1-137  
Washington, DC 20555-0001

Ladies and Gentlemen:

ULNRC-05049  
10 CFR 50.55a



**DOCKET NUMBER 50-483  
UNION ELECTRIC COMPANY  
CALLAWAY PLANT  
REQUEST FOR RELIEF FROM  
ASME SECTION XI CODE INSERVICE EXAMINATION REQUIREMENTS**

Pursuant to 10 CFR 50.55a(g)(5)(iii) and (or) 10 CFR 50.55a(a)(3), Union Electric Company (AmerenUE) hereby requests NRC approval of the attached, three relief requests for the second 10-year interval of Callaway's Inservice Inspection (ISI) Program. The Code Edition(s) and Addenda applicable to Callaway for its second 10-year ISI interval are ASME Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," 1989 Edition, with no Addenda, and 1995 Edition with 1996 Addenda.

The attached requests (identified as ISI-24, ISI-25, and ISI-26) pertain to implementation of ASME Section XI examination requirements. ISI-24 and ISI-25 concern the impracticality of fully meeting associated weld examination requirements because of the inability to attain complete examination coverage for welds associated with two components, one in the Chemical and Volume Control (BG) system (ISI-24) and the other in the Feedwater (AE) system (ISI-25), due to existing obstructions or geometrical restrictions associated with examining the affected weld/component configurations. ISI-26 pertains to implementation of ASME Section XI Appendix VIII requirements for ultrasonic examination of two austenitic pipe-to-valve/valve-to-pipe welds (in the BG system) which have only single-side access. Supporting information, including the justification for each request, is provided in the attachments.

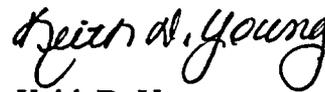
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ULNRC-05049  
September 3, 2004  
Page 2

This letter and the attached relief requests have been prepared in accordance with the format outlined in the Nuclear Energy Institute white paper dated October 15, 2002, "Standard Format for Requests Pursuant to 10 CFR 50.55a." No new regulatory commitments have been made or identified pursuant to this letter and its attachments.

Please contact me at 573-676-8659 or Dave Shafer at 314-554-3104 for any questions you may regarding these relief requests.

Sincerely,



Keith D. Young  
Manager - Regulatory Affairs

TBE/jdg

Attachments: 10 CFR50.55a Requests ISI-24 and ISI-25  
10 CFR50.55a Request ISI-26

ULNRC-05049  
September 3, 2004  
Page 3

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10 CFR 50.55a Requests ISI-24 and ISI-25

Table 1

Relief Requested in Accordance with 10 CFR 50.55a(g)(5)(iii)  
 Inservice Inspection Impracticality

2<sup>nd</sup> 10-Year Interval – Inservice Inspection Program

ASME Code Section XI – 1989 Edition, Appendix VIII of Section XI, 1995 Edition with the 1996 Addenda

REQUEST NUMBER	1. ASME CODE COMPONENT (AREA OR WELD TO BE EXAMINED)	2. COMPONENT ID NO.	3. APPLICABLE CODE REQUIREMENT (100% WELD COVERAGE)	4. IMPRACTICALITY OF COMPLIANCE	5. BURDEN CAUSED BY COMPLIANCE	6. PROPOSED ALTERNATIVE AND BASIS FOR USE	7. DURATION OF PROPOSED ALTERNATIVE
ISI-24	BG System Centrifugal Charging Pump "A" Support Lug #4	2-PBG05A-SUP-4	Exam Category C-C Item No. C3.30 Figure IWC-2500-5  69% Surface Coverage	See Paragraph 4.A	See Paragraph .5.A	See Paragraph 6.A	See Paragraph 7
ISI-25	AE System 14"X 3" Weldolet to Valve	2-AE-04-F043	Exam Category C-F-2 Item No. NBZ EXAMS - 1 Figure IWC-2500-7  67% Volume Coverage	See Paragraph 4.B	See Paragraph 5.B	See Paragraph 6.B	See Paragraph 7

**10 CFR 50.55a Requests ISI-24 and ISI-25**

**Relief Requested  
In Accordance with 10 CFR 50.55a(g)(5)(iii)**

**--Inservice Inspection Impracticality--**

1. **ASME Code Components Affected**  
Refer to Table 1, Columns 1 and 2.
2. **Applicable Code Edition and Addenda**  
ASME Code Section XI – 1989 Edition, Appendix VIII of Section XI, 1995 Addition with the 1996 Addenda
3. **Applicable Code Requirement**  
Refer to Table 1, Column 3.
4. **Impracticality of Compliance**
  - A. The pump pedestal and the pump flange prohibit complete access to the weld. The right side of the weld butts up against the pump flange face, and the gap between the pump and the pedestal does not allow room to examine the bottom portion of the weld. 69% of the weld was examined.
  - B. The configuration of the piping limits the coverage area of the axial scan. The configuration is a weldolet on an 18" pipe to a 3" valve. The pipe on either side of the weld tapers down to a flat weld face. The transducer is able to travel from the pipe to the weld and along the surface of the weld, but cannot travel over the interface between the weld and the pipe without transducer liftoff. The angle of the pipe face on the valve side of the weld is too steep to allow a scan from that direction. 100% coverage was obtained for the parallel scan (both clockwise and counter-clockwise). 67% of the weld volume was examined.
5. **Burden Caused by Compliance**
  - A. 100% coverage of this weld is not obtainable without disassembling the pump.
  - B. 100% coverage of this weld is not obtainable without a redesign of the valve and pipe configuration.
6. **Proposed Alternative and Basis for Use**
  - A. Substitute weld 2-PBG05A-SUP-3 for weld 2-PBG05A-SUP-4 in the Inservice Inspection Program Plan's list of welds scheduled for examination. Weld 2-PBG05A-SUP-3 is on the same pump but is currently not scheduled for examination. 69% of weld 2-PBG05A-SUP-4 was examined in Refuel 12 (Fall 2002) as well as 100% of weld 2-PBG05A-SUP-3. No recordable indications were found in either exam. These welds have not been examined before as a part

of the Inservice Inspection Program Plan since they were added during the 2<sup>nd</sup> Interval Inservice Inspection Program Plan update.

- B. None.** Based on the fact that no indications were detected, the weld integrity has been assured. It is impractical to achieve any additional weld coverage at this time.

**7. Duration of Proposed Alternative**

The remainder of the 2<sup>nd</sup> 10-Year Interval.

**10 CFR 50.55a Request ISI-26**

**Relief Requested  
in Accordance with 10 CFR 50.55a(g)(5)(iii) / 10 CFR 50.55a(a)(3)**

**--Inservice Inspection Impracticality--**

**1. ASME Code Components Affected**

<b>Weld Number</b>	<b>Description</b>	<b>Exam Category</b>	<b>Item Number</b>
2-BG-22-F021	3" PIPE TO VALVE	C-F-1	Augmented-No Break Zone Exam
2-BG-22-F022	VALVE TO 3" PIPE	C-F-1	Augmented-No Break Zone Exam

These are austenitic welds limited to single-side access and are subject to ultrasonic examination in accordance with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI. Only 50% volume coverage can be claimed for these exams.

**2. Applicable Code Edition and Addenda**

ASME Code Section XI – 1989 Edition, Appendix VIII of Section XI, 1995 Edition with the 1996 Addenda

**3. Applicable Code Requirement**

10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage when applying Supplement 2 to Appendix VIII:

(1) Piping must be examined in two axial directions and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available.

(2) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds, full coverage credit from a single side may be claimed only after completing a successful single-sided Appendix VIII demonstration using flaws on the opposite side of the weld.

10 CFR 50.55a(b)(2)(xvi)(B) requires that examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single-side examinations. To demonstrate equivalency to two-side examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and 10 CFR 50.55a(b)(2)(xv)(A).

#### **4. Impracticality of Compliance**

As stated above, 10 CFR 50.55a(b)(2)(xv)(A) requires that if access is available, the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld). Full coverage credit may be taken for single side exams on ferritic piping (when examination from both sides is not possible). However, for full coverage credit from a single side for austenitic piping, a procedure must be qualified with flaws on the inaccessible side of the weld. There are currently no qualified single-side examination procedures that demonstrate equivalency to two-side examination procedures on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to US nuclear applications.

The industry-established Performance Demonstration Initiative (PDI) Program addresses 10 CFR 50.55a(b)(2)(xv)(A) requirements regarding single-side access for piping. PDI Performance Demonstration Qualification Summary (PDQS) certificates for austenitic piping list the limitation that single-side examination is performed on a best-effort basis. The best-effort qualification is provided in place of a complete single-side qualification to demonstrate that the examiner's qualification and the subsequent weld examination is based on application of the best available technology.

When the examination area is limited to one side of an austenitic weld, examination coverage does not comply with 10 CFR 50.55a(b)(2)(xv)(A) and proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B). Full coverage credit cannot therefore be claimed.

#### **5. Burden Caused by Compliance**

There are currently no qualified single-side examination procedures that demonstrate equivalency to two-side examination procedures on austenitic piping welds. Current technology is not capable of reliably detecting or sizing flaws on the far side of an austenitic weld for configurations common to US nuclear applications.

#### **6. Proposed Alternative and Basis for Use**

The best available techniques, as qualified through the PDI for Supplement 2 with a demonstrated best effort for single-side examination, are to be used from the accessible side of the weld (in lieu of complete or strict compliance with Appendix VIII requirements).

**7. Duration of Proposed Alternative**

The remainder of the 2<sup>nd</sup> 10-Year Interval.