

February 5, 2001

U.S. Nuclear Regulatory Commission  
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Washington, D.C. 20555-0001

Gentlemen:

ULNRC-4379

DOCKET NUMBER 50-483  
CALLAWAY PLANT  
UNION ELECTRIC COMPANY  
REQUEST FOR RELIEF FOR  
THE CALLAWAY PLANT INSERVICE INSPECTION PROGRAM PLAN

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- References:
- 1) Federal Register Notice 64 FR 51370,
  - 2) 10 CFR 50.55a(b)(2)
  - 3) ASME Section XI, 1995 Edition with 1996 Addenda

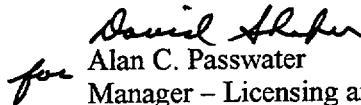
10CFR 50.55a, as amended by the Federal Register Notice 64 FR 51370 dated September 22, 1999 (Final Rule), requires implementation of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems". In preparations to implement the Performance Demonstration Initiative (PDI) requirements at Callaway, two Requests for Alternative Examinations were developed.

The first, ISI-21, is a request to comply with the stated position of the NRC Staff vice the requirements of ASME Section XI, Appendix VII, 1995 Edition with 1996 Addenda, and is submitted in accordance with 10 CFR 50.55a(a)(3)(i).

The second, ISI-22, is a request to allow a best effort examination in cases where austenitic welds have a geometry such that a single sided examination is required. This request is submitted in accordance with 10 CFR 50.55a(g)(6)(i).

If you have any questions concerning this information, please contact Dave Shafer at (314) 554-3104 or Dwyla Walker at (314) 554-2126.

Very truly yours,

  
for Alan C. Passwater  
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DJW/bkm

Attachments: Request for Alternative Examination No. ISI-21  
Request for Alternative Examination No. ISI-22

A047

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**COMPONENT IDENTIFICATION**

All components subject to ultrasonic examination in accordance with the 1995 Edition and 1996 Addenda of ASME Section XI, Appendix VIII.

**CODE/REGULATORY REQUIREMENTS**

The 1995 Edition and 1996 Addenda of ASME Section XI, Subsubartical VII-4240, requires a minimum of 10 hours of annual training.

10 CFR 50.55a(b)(2)(xiv) requires that all personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training using examination specimens that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

**BASIS FOR RELIEF**

10 CFR 50.55a requires the 1995 Edition, 1996 Addenda, of Section XI, Appendix VIII, qualification requirements. Appendix VIII imposes the requirements of Appendix VII of the 1995 Edition, with 1996 Addenda of Section XI, including Subsubarticle VII-4240, which requires a minimum of 10 hours of annual training.

10 CFR 50.55a(b)(2)(xiv) requires that all personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training on specimens that contain cracks. This training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

Paragraph 2.4.1.1.1 in the *Federal Register* notice for the final rule (64 Fed. Reg. 51370(1999)) contained the following statements:

The NRC had determined that this requirement (10 hours of training on an annual basis) was inadequate for two reasons. The first reason was that the training does not require laboratory work and examination of flawed specimens. Signals can be difficult to interpret and, as detailed in the regulatory analysis for this rulemaking, experience and studies indicate that the examiner must practice on a frequent basis to maintain the capability for proper interpretation. The second reason is related to the length of training and its frequency. Studies have shown that an examiner's capability begins to diminish within approximately 6 months if skills are not

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maintained. Thus, the NRC had determined that 10 hours of annual training is not sufficient practice to maintain skills, and that an examiner must practice on a more frequent basis to maintain proper skill level... The PDI program has adopted a requirement for 8 hours of training, but it is required to be hands-on practice. In addition, the training must be taken no earlier than 6 months prior to performing examinations at a licensee's facility. PDI believes that 8 hours will be acceptable relative to an examiner's abilities in this highly specialized skill area because personnel can gain knowledge of new developments, material failure modes, and other pertinent technical topics through other means. Thus, the NRC has decided to adopt in the Final Rule the PDI position on this matter. These changes are reflected in § 50.55a(b)(2)(xiv).

Implementation of the requirements contained in ASME Section XI and 10 CFR 50.55a will result in redundant training programs. The use of the regulatory requirements in lieu of additional requirements will simplify record keeping, satisfy needs for maintaining skills, and provide an acceptable level of quality and safety.

Approval of an alternative to the above quoted requirements is requested in accordance with 10 CFR 50.55a(a)(3)(i). The alternative would be in lieu of Subsubarticle VII-4240, "Annual Training." The applicable examinations will be performed during the second Inservice Inspection 120-month interval.

**ALTERNATIVE REQUESTED**

Annual ultrasonic training shall be conducted in accordance with 10 CFR 50.55a(b)(2)(xiv) in lieu of Section XI, appendix VII, Subsubarticle VII-4240.

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**COMPONENT IDENTIFICATION**

Austenitic piping welds with single side access, subject to ultrasonic examination with Supplement 2 of Appendix VIII to the 1995 Edition with 1996 Addenda of ASME Section XI.

**CODE/REGULATORY REQUIREMENTS**

10 CFR 50.55a(b)(2)(xv)(A), requires the following examination coverage when applying Supplement 2 of 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 sided examinations, the demonstration must be performed to the requirements of Appendix VIII as modified by this paragraph and § 50.55a(b)(2)(xv)(A).

**BASIS FOR RELIEF**

The above quoted regulations require that if access is available, the weld shall be scanned in each of the four directions (parallel and perpendicular to the weld) where required. Coverage of single side exams on ferritic piping may be credited where examination from both sides is not possible. However, for austenitic piping, a procedure must be qualified with specimen flaws on the inaccessible side of the weld. There are currently no qualified single side examination procedures that demonstrate equivalency to two-sided 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. Thus, complying with the Code and regulatory requirements for single-side examinations of austenitic piping welds is impractical.

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The PDI Program conforms with the regulations 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 lieu of a complete, single-side qualification to demonstrate that the examiners qualification and the subsequent weld examination are 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). Proficiency demonstrations do not comply with 10 CFR 50.55a(b)(2)(xvi)(B) and full coverage credit may not be claimed. Based on the impracticality of meeting the requirements, the PDI “best effort” qualification will be used for single-sided austenitic weld examinations.

Relief is requested in accordance with 10 CFR 50.55a(g)(6)(i) from the new examination coverage and qualification demonstration requirements for austenitic piping welds with single side access specified in Paragraph (b)(2)(xvi)(B). The examinations covered by this relief request will be performed during the second inspection interval.

**PROPOSED ALTERNATIVE EXAMINATION**

For austenitic piping welds that can be examined from only a single side, the best available techniques, as qualified through the Performance Demonstration Initiative for Supplement 2 with demonstrated best effort for single side examination, will be used from the accessible side of the weld. This alternative will provide a reasonable level of quality and safety, in consideration of the impracticality of meeting the requirements of the Code and the regulations for this specific group of weld examinations.