

March 15, 2000

Mr. J. V. Parrish
Chief Executive Officer
Energy Northwest
P.O. Box 968 (Mail Drop 1023)
Richland, WA 99352-0968

SUBJECT: NRC STAFF EVALUATION OF INSERVICE INSPECTION PROGRAM (ISI)
RELIEF REQUEST 2ISI-18 AND 2ISI-19, WNP-2 (TAC NO. MA6333)

Dear Mr. Parrish:

By letter dated August 12, 1999, Energy Northwest requested relief from the requirements of subsections IWE and IWL of Section XI of the American Society of Mechanical Engineers Code (ASME) for the First Containment Inspection Interval. Subsections IWE and IWL provide the requirements for inservice inspection (ISI) of Class CC (concrete containment) and Class MC (metallic containment) of light-water cooled power plants.

Relief request 2ISI-18 requested relief from meeting the provisions of Subarticle IWA-2300 of the 1992 Edition and Addenda of ASME Section XI that examination personnel be qualified and certified in accordance with ANSI/ASNT CP-189, "Standard for Qualification and Certification of Nondestructive Testing Personnel." In lieu of using the requirements of Section IWA-2300, the licensee proposes to conduct examinations with personnel qualified and certified to a written practice based on SNT-TC-1A and the 1989 Edition of ASME Section XI.

Relief request 2ISI-19 requested relief from meeting the provisions of ASME Section XI, 1992 Edition, 1992 Addenda, IWE-2420. In lieu of using the requirements of IWE-2420, ASME Section XI, 1992 Edition, the requirements of IWE-2420, ASME Section XI, 1998 Edition will be used.

The NRC staff has evaluated the information provided by Energy Northwest. For Relief Request 2ISI-18, the staff concludes that compliance with the code requirements would result in a hardship without a compensating increase in the level of quality and safety, and that the licensee's proposed alternative will provide reasonable assurance of containment pressure integrity. Therefore, the proposed alternative is authorized for the first ten-year containment inspection interval pursuant to 10 CFR 50.55a(a)(3)(ii). For Relief Request 2ISI-19, the

Mr. J. V. Parrish

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licensee's proposed alternative will provide an acceptable level of quality and safety. Therefore, the proposed alternative is authorized for the first ten-year containment inspection interval pursuant to 10 CFR 50.55a(a)(3)(i). Our related safety evaluation is enclosed.

Sincerely,

/RA/

Stephen Dembek, Chief, Section 2
Project Directorate IV & Decommissioning
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-397

Enclosure: Safety Evaluation

cc w/encl: See next page

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WNP-2

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SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUESTS FROM ASME SECTION XI REQUIREMENTS

FOR CONTAINMENT INSPECTION

ENERGY NORTHWEST

WNP-2

DOCKET NO. 50-397

1.0 INTRODUCTION

In the *Federal Register* dated August 8, 1996 (61 FR 41303), the Nuclear Regulatory Commission (NRC) amended its regulations to incorporate by reference the 1992 edition with 1992 addenda of Subsections IWE and IWL of Section XI of the ASME Boiler and Pressure Vessel Code (Code). Subsections IWE and IWL provide the requirements for inservice inspection (ISI) of Class CC (concrete containment) and Class MC (metallic containment) of light-water cooled power plants. The effective date for the amended rule was September 9, 1996, and it requires the licensees to incorporate the new requirements into their ISI plans and to complete the first containment inspection by September 9, 2001. However, a licensee may propose alternatives to or submit a request for relief from the requirements of the regulation pursuant to 10 CFR 50.55a(a)(3) and (g)(5).

By letter dated August 12, 1999, Energy Northwest proposed an alternative to the requirements of Subsections IWE and IWL of Section XI of the ASME Code for WNP-2. The following are the NRC staff's findings.

2.0 EVALUATION

2.1 Relief Request 2ISI-18

Code Requirements:

ASME Section XI, 1992 Edition, 1992 Addenda, Subarticle IWA-2300, requires examination personnel to be qualified and certified to the requirements of ANSI/ASNT CP-189.

Specific Relief Requested:

Relief is requested from meeting the provisions of Subarticle IWA-2300, "Qualifications of Nondestructive Examination Personnel." This Subarticle requires personnel that perform nondestructive examinations be qualified and certified using a written practice in accordance with ANSI/ASNT CP-189, "Standard for Qualification and Certification of Nondestructive Testing Personnel," as amended by the requirements of ASME Section XI.

Basis for Relief:

Relief is requested in accordance with 10 CFR 50.55a(a)(3)(i) in that the proposed alternative provides an acceptable level of quality and safety.

The requirements regarding examination of Code Class 1, 2, and 3 components (10 CFR 50.55a) reference the 1989 Edition of ASME Section XI. The qualification of nondestructive examination personnel is addressed in Subarticle IWA-2300 of the 1989 Edition and requires a written practice based on SNT-TC-1A, as amended by the requirements of Subarticle IWA-2300. The licensee has implemented a qualification program based on the above requirements.

In a *Federal Register* Notice dated August 8, 1996 (61 *Federal Register* 41303), the NRC amended 10 CFR 50.55a to incorporate by reference the 1992 Edition with 1992 Addenda of Subsections IWE and IWL of Section XI of the ASME Boiler and Pressure Vessel Code. This change represents an addition to the Inservice Inspection (ISI) Program Plan. The ASME Section XI, 1992 Edition, 1992 Addenda requires the use of a written practice based on the requirements of ANSI/ASNT CP-189, as amended by the requirements of Subarticle IWA-2300, to implement Subsection IWE. This is a duplication of the existing written practice and existing qualification and certification program for personnel that perform nondestructive examinations of Code Class 1, 2, and 3 components (as noted in the above paragraph).

Alternative Examinations:

Examinations required by Subsection IWE shall be conducted by personnel qualified and certified to a written practice based on the current ISI Section XI Code of record for Subsections IWB, IWC, IWD, and IWF for the remainder of the second ISI inspection interval. The current Code for the second inspection interval is the 1989 Edition, no Addenda. These alternate requirements will be revised to the latest approved written practice when the ISI Program Plan for IWB, IWC, IWD, and IWF is revised for the third ISI inspection interval. The revision is anticipated to be completed in 2005.

In addition to the current written practice for personnel performing examinations of Code Class 1, 2, and 3 components, as described in the previous paragraph, the following will be included in the written practice for IWE personnel qualification:

1. A near distance test chart that meets the requirements of IWA-2321 and IWA-2322 ASME Section XI, 1992 Edition, 1992 Addenda will be used for annual demonstration of natural or corrected near distance visual acuity.
2. Personnel performing IWE examinations will receive instructions pertinent to IWE components.

Justification for Granting Relief:

The licensee will revise the written practice for qualifying and certifying examination personnel to ASME Section XI, IWA-2300, 1992 Edition, 1992 Addenda, or later, when the ISI program is revised for the third ISI inspection interval during 2005.

The alternative incorporates provisions of IWA-2321 and IWA-2322 of the 1992 Code for vision and illumination requirements as alternate visual near distance requirements for the remainder of the second ISI inspection interval.

The alternative provides qualification and certification to the same requirements used for personnel performing examinations of Code Class 1, 2, and 3 components in addition to specific requirements for visual acuity for IWE component examinations. The alternative meets, as a minimum, the requirements for examinations now being performed on Code Class 1, 2, and 3 components, therefore, providing an adequate level of quality and safety.

Visual examination is the primary nondestructive examination method required by Subsection IWE. Neither CP-189 or SNT-TC-1A specifically includes visual examination, thus, the Code requires qualification and certification to comparable levels as defined in CP-189 or SNT-TC-1A, as applicable, and the employees written practice.

The latest Edition of ASME Section XI (1998) no longer requires nondestructive examination examiners to be qualified or certified using CP-189 for performance of visual containment examinations (IWE-2330). The 1998 Edition of Section XI requires that the Owner establish a qualification and certification program.

The current requirements represent a hardship to WNP-2, and its vendors, regarding the development and maintenance of an additional, separate written practice. Development and administration of a second program would not enhance safety or quality and would serve as a burden, particularly in developing a second written practice, tracking of certifications, and duplication of paperwork. This duplication would also apply to nondestructive examination vendor programs. Updating to the 1992 Edition, 1992 Addenda, for subsections IWB, IWC, IWD, and IWF would require a request for relief similar to this one. The alternate, as a minimum, has the same requirements for performing visual examination of Code Class 1, 2, and 3 components.

Staff Evaluation:

In lieu of using the requirements of Section IWA-2300 of the 1992 Edition and Addenda of ASME Section XI that examination personnel be qualified and certified in accordance with ANSI/ASNT CP-189, "Standard for Qualification and Certification of Nondestructive Testing Personnel," the licensee proposes to conduct examinations with personnel qualified and certified to a written practice based on SNT-TC-1A and the 1989 Edition of ASME Section XI. This relief is requested for the first ten-year containment inspection interval for WNP-2.

The staff recognizes that under the current licensee inspection program, examinations are to be conducted by personnel qualified and certified to a written practice based on SNT-TC-1A in accordance with the 1989 Edition of ASME Section XI. The staff also realizes that a written practice based on the requirements of CP-189, as amended by the requirements of Section IWA-2300, to implement Sections IWE and IWL duplicates efforts already in place for all other subsections. To develop and to administer a second program would constitute a burden, particularly in developing a second written practice, tracking of certifications, and duplication of paperwork. In addition, Section IWA-2300 of the 1992 Edition, 1992 Addenda, states that certification based on SNT-TC-1A are valid until recertification is required. Furthermore, in this

request, the licensee indicated that these alternate requirements will be revised to the latest approved written practice when the ISI Program Plan for IWB, IWC, IWD, and IWF is revised for the third ISI inspection interval. The revision is anticipated to be completed in 2005.

On the basis discussed above, the staff concludes that developing and implementing two qualification programs for NDE personnel would result in a burden on the licensee. The alternative proposed by the licensee will provide adequate qualifications for personnel performing containment examinations. Therefore, the request for relief is authorized for the first ten-year containment inspection interval of the WNP-2 containment ISI program pursuant to 10 CFR 50.55a(a)(3)(ii) on the basis that compliance with the specific requirements of the Code would result in hardship without a compensating increase in the level of quality and safety.

2.2 Relief Request 2ISI-19

Code Requirements:

ASME Section XI, 1992 Edition, 1992 Addenda, IWE-2420(b) and IWE-2420(c) state:

- "(b) When component examination results require evaluation of flaws, areas of degradation, or repairs in accordance with IWE-3000, and the component is found to be acceptable for continued service, the areas containing such flaws, degradation, or repairs shall be reexamined during the next inspection period listed in the schedule of the inspection program of IWE-2411 or IWE-2412, in accordance with Table IWE-2500-1, Examination Category E-C.
- (c) When the reexaminations required by IWE-2420(b) reveal that the flaws, areas of degradation, or repairs remain essentially unchanged for three consecutive inspection periods, the areas containing such flaws, degradation, or repairs no longer require augmented examination in accordance with Table IWE-2500-1, Examination Category E-C."

Specific Relief Requested:

Relief is requested from implementing ASME Section XI, 1992 Edition, 1992 Addenda, IWE-2420.

Basis for Relief:

Relief from the above requirements is requested under 10 CFR 50.55a(a)(3)(i) in that the proposed alternative provides an acceptable level of quality and safety.

Alternative Examination:

The requirements of IWE-2420, ASME Section XI, 1998 Edition will be used.

Justification for Granting Relief:

In its justification for granting relief, the licensee stated that the current requirement is ambiguous, contradicts IWE-3122, and does not follow similar requirements for ASME Section XI, Code Class 1, 2, and 3 components.

When a component is subjected to an inservice examination, ASME Section XI provides four means for acceptance in IWE-3122. These four means are:

1. IWE-3122.1 - results do not exceed acceptance standards of IWE-3400,
2. IWE-3122.2 - results exceed the acceptance standards, but the component is repaired,
3. IWE-3122.3 - results exceed the acceptance standards, but the component is replaced, and
4. IWE-3122.4 - results exceed the acceptance standards, but the component is evaluated as acceptable for continued service.

In accordance with IWE-3122, only when an unacceptable examination result is evaluated and determined acceptable for continued service is a reexamination required during the next inspection period. Contrary to this, the requirements of IWE-2420 would require reexamination during the next inspection period for components that were repaired. Performing successive examinations on a component that has been repaired is not warranted since the component has been restored to an acceptable condition.

The proposed alternate requirement removes the ambiguity and conflict between IWE-3122 and IWE-2420.

ASME has approved the proposed alternative.

Staff Evaluation:

In lieu of meeting the 1992 edition of ASME Section XI requirements of performing successive examinations for components which are restored, via repair activities, to an acceptable condition for continued service in accordance with standards of IWE-3000, the licensee proposed to use the requirements specified in IWE-2420, ASME Section XI, 1998 Edition. In the 1998 Edition of Subsections IWE-2420(b) and IWE-2420(c) of ASME Section XI, repairs were removed from the reexamination requirements. Also, in the 1998 Edition of Subsection IWE-2420(c) of ASME Section XI, the schedule of reexamination was changed from "three consecutive inspection periods" to "the next successive inspection period."

The staff realizes that when repairs are complete, IWA-4150 requires licensees to evaluate the suitability of the repair. When a repair is required because of the failure of an item, the evaluation shall consider the cause of failure. Also, the repaired item receives, as required, preservice examinations to ensure that the repair is suitable. If the repair is not suitable, the repair does not meet code requirements and the component is not acceptable for continued

service. Also, Subsections IWB-2420(b), IWC-2420(b), and IWD-2420(b) of ASME Section XI do not require the successive inspection of repairs for Class 1, 2, and 3 components as required in IWE-2420(b) for metal containment. In addition, changing the schedule of reexamination of areas that remain essentially unchanged from "three consecutive inspection periods" to "the next inspection period" is consistent with the requirements for Class 2 components.

On the basis discussed above, the staff concludes that the licensee's proposed alternative (the use of 1998 Edition of ASME Section XI, Subsection IWE-2420) will provide an acceptable level of quality and safety and, therefore, is authorized pursuant to 10 CFR 50.55a(a)(3)(i).

3.0 CONCLUSION

Based on our review of the information provided in the requests for relief (Relief Requests 2ISI-18 and 2ISI-19), the staff concludes that, for Relief Request 2ISI-19, the licensee's proposed alternative will provide an acceptable level of quality and safety. Therefore, the proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i). For Relief Request 2ISI-18, the staff concludes that compliance with the code requirements would result in a burden without a compensating increase in the level of quality and safety, and that licensee's proposed alternative will provide reasonable assurance of containment pressure integrity. Therefore, this proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(ii).

Principal Contributor: T. Cheng, NRR/EMEB

Date: March 15, 2000