WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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October 1, 1992
02-92-230

Docket No. 50-397

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
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Washington, D. C. 20555

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NO. NPF-21
NRC INSPECTION REPORT 92-20
RESPONSE TO NOTICE OF VIOLATIONS

The Washington Public Power Supply System hereby replies to the Notice of Violations contained in your letter dated September 1, 1992. Our reply, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, consists of this letter and Appendix A (attached).

In Appendix A, the violations are addressed with an explanation of our position regarding validity, corrective action and date of full compliance.

Sincerely,

J. C. Gearhart, Director
Quality Assurance (Mail Drop 1023)

REF/bk

Attachments

cc: JB Martin - NRC RV
NS Reynolds - Winston & Strawn
JW Clifford - NRR
DL Williams - BPA/399
NRC Site Inspector - 901A

9210D 90-218 6P

APPENDIX A

During an NRC inspection conducted on June 1 to June 12, 1992, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions" 10 CFR Part 2, Appendix C (1992), the violations are listed below:

A. 10 CFR 50.55a(g)(2) requires that components meet the requirements set forth in the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The code edition in effect at Washington Nuclear Power Project Unit 2 (WNP-2) is the 1980 Edition up to and including the Winter of 1980 Addenda to the code (80W80). Appendix III, paragraph 3430, of this edition and addenda of the code requires the circumferential calibration of ultrasonic examinations, for the evaluation of welds made in pipe, by the use of a notch whose longest dimensions lies in the axial direction of the pipe. As provided in paragraph IWA-2240 of Section XI, other calibration or examinations may be substituted if they are proven to be equivalent or superior to the required examination.

Contrary to the above, as of May 30, 1992, WNP-2 did not perform circumferential examinations that were calibrated in conformance with the above requirements for the following welds examined by the NRC - welds 26MS(1)D6, 26MS(1)6LDI, 26MS(1)6LDO, 26MS(1)D7, 26MS(1)7LUO, 26MS(1)7LU1, 26MS(1)A-8, 26MS(1)A-8LDO, 12LPCS(1)-1, and 12LPCS(1)2. The alternate examinations being performed were not proven to be equivalent or superior to the requirements.

This is a Severity Level IV Violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The above referenced section of the ASME Code infers that the Ultrasonic Testing (UT) instrument should be calibrated to the axial and circumferential notches separately and settings used in the field should be specific to the direction of calibration. It has been the practice at WNP-2 to calibrate the instruments only to the circumferential notch and to use that sensitivity setting on all four scan directions involved in ferritic pipe weld examinations (two axial scans and two circumferential scans).

The Supply System practice and UT procedure were a continuation of the procedure and practices of the Pre-Service Inspection (PSI) contractor. This practice was based on testing that determined the difference in the sensitivity calibration for the circumferential and axial notches on the calibration blocks was less than two decibels (db) as measured on analog instruments. Since a 2db tolerance is allowed by the ASME code, the PSI contractor concluded that calibration on only the circumferential notch was adequate to use both axially and circumferentially during weld examination. However, documentation of the testing was not retained by the Supply System. The number of calibration blocks measured and their identity cannot be determined. Consequently, the thoroughness of the testing cannot be established.

Nondestructive Examination (NDE) Level III Examiners assure that practices and procedures are in accordance with the ASME code. Generally this involves a one over one review by someone with equal or better qualifications. The Level III examiners are specifically trained to be experts in their assigned areas of responsibility. The UT procedure is reviewed annually to assure any changes in the Code or equipment are addressed. No major changes have been made to the Code since PSI was initiated. However, a major change in conducting UT scans was made with the introduction of digital UT instruments during the 1991 Refueling Outage (R-6). No comparison scans of the circumferential and axial notches were made at that time with the new digital instruments. As a result, the Level III examiners did not adequately verify that the alternate method of calibration of using a single notch profile for all scan directions was still applicable for the new instruments.

The discrepancies identified by the NRC were based on measurements of the notch profiles on selected calibration blocks using digital instruments only. As a result of these discrepancies and the lack of testing documentation from the PSI contractor, the Supply System elected to verify the difference in notch profiles to be less than or equal to 2db on 40 ferritic pipe calibration blocks using analog instruments. These calibration blocks have been used at WNP-2 since PSI. Verification was done to establish the validity of previous examinations with respect to ASME code requirements. A comparison of the measurements between the two notches on each calibration block revealed the difference exceeded 2db on seven blocks. Based on these results, it appears the PSI contractor did not perform adequate testing to ensure the notch profiles on all of the calibration blocks were within 2db as measured by analog instruments. Also, adequate verification was not performed by the Supply System inspection coordinator during the PSI period to ensure the alternate method of calibration was equivalent or superior to the ASME code prescribed methodology.

The root cause is Personnel - Work Practices - Intended or Required Verification Not Performed. The Supply System PSI program coordinator did not assure that the calibration methods of the PSI vendor were adequate to meet the requirements of ASME Section XI. Also, the Supply System NDE Level III examiners did not verify that the digital instruments, when used in combination with the WNP-2 test methods, would satisfy the ASME code requirements.

The maximum difference observed between the two notch profiles was 7db in one calibration block as measured by an analog instrument. There is only one weld at WNP-2 that was examined per this block. The weld was reexamined during R-7 with the proper instrument calibration and found acceptable. The maximum observed difference in the remaining blocks was 5db. An actual flaw indication requiring analysis would have resulted in, at least, a recordable indication even considering the maximum difference of 5db between the notch profiles. Since the beginning of the PSI program, there have been no ferritic pipe weld recordable flaw indications observed at WNP-2. This provides assurance that there are no critical flaws in previously examined ferritic pipe welds.

Corrective Steps Taken/Results Achieved

1. All ferritic pipe weld UT examinations performed during the 1992 Refueling Outage (R-7) were partially reexamined in the circumferential scan direction with the corrected sensitivity level from the axial notch. No recordable indications were detected in either the initial or final scans.

2. Three pipe welds examined during the 1991 Refueling Outage (R-6) using digital instruments were also partially reexamined as described above. No recordable indications were detected in either the initial or final scans.

Corrective Action to be Taken

1. The Ultrasonic Testing procedure for ferritic pipe welds will be revised by December 31, 1992 to require sensitivity calibrations on both the axial and circumferential notches of the calibration blocks.

2. By the end of the 1993 Refueling Outage, circumferential scans will be re-performed on all ferritic pipe welds previously examined using digital instruments.

3. By the end of the 1993 Refueling Outage, circumferential scans will be re-performed on all ferritic pipe welds previously examined using the calibration blocks that were found to have exceeded a difference of 2db between notches as measured by analog instruments.

Date of Full Compliance

WNP-2 will be in full compliance by the end of the 1993 Refueling Outage when all ferritic pipe weld examinations will have been performed within ASME code requirements.

B. 10 CFR 50.55a(b)(iv)(A) requires that welds in the emergency core cooling system be examined. In addition, 10 CFR50.55a(c)(4) states that the applicable code edition and addenda for a component continues to be that code edition and addenda that were required by Commission regulations for such component at the time of issuance of the construction permit. The applicable code and edition for WNP-2 is the 1971 edition with the addenda up to the winter of 1973. Article 2 of Section V of this code edition and addenda requires the placement of section markers on the item being examined in such a manner as to permanently record the weld coverage on the radiographic film itself.

Contrary to the above, on May 29, 1992, the licensee accepted radiographs which did not have section markers on the full series of radiographs to permanently record weld coverage, on radiographic film, for high pressure core spray weld WRR 8417 X1-1.

This is a Severity Level V Violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause of this event is Personnel - Work Practices - Documents Not Followed Correctly. The Supply System NDE Level III Examiner accepted weld radiographs with no section markers. This violated the ASME Section XI code.

During radiography of High Pressure Core Spray (HPCS) weld WRR 8417-X1-1, the identification (section) marker fell off. The radiograph was found to be acceptable but had no identification. Because the location and geometry of the weld made it difficult to X-ray, the NDE Level III Examiner found an earlier radiograph that was not acceptable because of inadequate film density but it did have a section marker. After comparing the two films, the Level III Examiner accepted the film as a set based on the fact that both radiographs showed a common, unique spot on the fitting that was welded. The Supply System recognized this as a possible code violation on June 1, 1992 and submitted Problem Evaluation Request (PER) 292-592. Engineering evaluation had determined the weld to be acceptable when using the two radiographs as a set. However, this method of examination was not given adequate consideration with regard to compliance of the ASME code.

Corrective Steps Taken/Results Achieved

The section of weld in question was radiographed again with the proper section markers. Examination of the radiograph revealed no recordable indications.

Corrective Action to be Taken

The radiography procedure will be revised by December 31, 1992 to require section markers as the only acceptable method of identification on the radiograph.

Date of Full Compliance

WNP-2 was in full compliance on June 13, 1992 when the weld in question was properly radiographed and examined to be acceptable.

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