Washington Public Power Supply System
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Docket No. 50-397

October 14, 1983
G02-83-925

Mr. J. B. Martin
Regional Administrator
U.S. Nuclear Regulatory Commission
Region V
1450 Maria Lane, Suite 210
Walnut Creek, California 94596

Subject: NUCLEAR PROJECT NO. 2
10CFR50.55(e) REPORTABLE CONDITION #286
LINEAR INDICATIONS IN CONTAINMENT WELD PADS

In accordance with the provisions of 10CFR50.55(e), your office was informed by telephone, of the above subject condition. The attachment provides the Project's interim report on this condition. Our next report will be transmitted no later than November 11, 1983.

If you have any questions regarding this subject, please contact Roger Johnson, WNP-2 Project QA Manager, at (509) 377-2501, extension 2712.

C. S. Carlisle
Program Director, WNP-2

RTJ/kd

Attachment: As stated

cc: W.S. Chin, BPA
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397
LICENSE NO. CPPR-93
10CFR50.55(e) CONDITION #286
LINEAR INDICATION ON CONTAINMENT WELD PADS

INTERIM REPORT

Description of Deficiency

A sample of attachment welding to the containment vessel made under Contract 213 was reinspected under the Quality Verification Program. During this reinspection, linear indications were found in the 3/8" peripheral fillet welds attaching a 2" x 5' x 5' weld pad to the containment. The weld pad supports a radial beam which rests on a beam seat attached by welding to the weld pad. Samples were cut from the defective weld and examined. These samples contained evidence of under-bead cracking in the weld pad.

Subsequent MT examinations are in progress on 18 similar weld pads used for support of radial beams. Similar linear indications have been found in areas of the peripheral fillet attachment welds for nine of these weld pads.

Ultrasonic testing was performed on the attachment welds on the weld pad in which the linear indications were initially discovered. This UT examination found subsurface indications in areas of the attachment weld where magnetic particle (MT) examinations identified no surface indications.

The indications found by both UT and MT examination occur predominantly in the weld pad at the toe of the fillet weld or in the heat affected zone. However, additional MT examination also shows some evidence of cracking in the containment at the toe of the fillet weld.

Safety Implication

Supports for safety-related piping systems are attached to many of the radial beams which are supported by these weld pads. Four of the radial beams also support pipe whip restraints for the reactor feedwater lines.

If the attachment welds for the weld pads were to have failed under postulated seismic or LOCA loading conditions, damage to safety-related systems could have occurred. This could include breach of containment, or damage to safety-related systems resulting from unrestrained pipe whip or falling radial beams. An engineering evaluation is currently underway to assess the failure potential of these welds under the design loading conditions. Until this evaluation is completed, this condition is concluded to be potentially reportable under 10CFR50.55(e).

Cause of Deficiency

Neither the cause of the defects in the attachment welding, nor the reason for the failure to detect and identify the defects at the time NDE was initially performed is known at this time. Quality documentation completed by the 213 Contractor states that pre-heat was performed and 100% MT examinations of the completed weld found no defects.

Corrective Action

All 19 of the weld pads providing support for radial beams are being reinspected and repaired. Paint is removed from the peripheral fillet weld attaching the weld pad to the containment vessel, and 100% MT examination is performed (except for some inaccessible weld areas) on the peripheral fillet weld. Unacceptable defects in the weld or base metal are removed by grinding. Excavated areas are then rewelded to the required fillet weld size. On weld pads which have inaccessible areas which cannot be brought to the original design configuration, a structural analysis will be necessary to either demonstrate acceptability for the as-built condition or increase the fillet weld size to compensate for the inaccessible areas.

Fillet attachent welds are also provided in circular holes in these 19 weld pads. These welds are designed to be redundant to the peripheral fillet weld. Both the peripheral fillet weld and the interior circular fillet welds on each weld pad are designed to carry the postulated loads independently of one another. UT examination of these welds found subsurface indications similar to those in the peripheral welds. These welds will not be repaired unless assumed cracking in the base metal or weld on the containment side of the weld joint is concluded to have the potential to violate the containment pressure boundary.

These examinations and repair are in progress at the time of this interim report. Final resolution will be documented in a subsequent report.

Action to Prevent Recurrence

There is no on-going work outside the repair to which remedial actions would be applicable. Therefore, no corrective action to prevent reucrrence is appropriate.