Washington Public Power Supply System
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August 27, 1981
G03-81-2424

Nuclear Regulatory Commission, Region V
Suite 202, Walnut Creek Plaza
1990 North California Boulevard
Walnut Creek, California 94596

Attention: Mr. B. H. Faulkenberry
Chief, Reactor Construction Projects Branch

Gentlemen:

Subject: Project NOS. 3 AND 5
DOCKET NUMBERS 50-508 AND 50-509
INTERIM REPORT OF POTENTIAL 50.55(e)
WELD CRACKS IN EMBED PLATES

References: 1) Letter, G03-81-2111, R. S. Leddick to B. H. Faulkenberry, dated June 12, 1981.
2) Letter, G03-81-2159, R. S. Leddick to B. H. Faulkenberry, dated June 24, 1981.

Attached please find a copy of the Engineer's Interim Report of a potential 10CFR50.55(e) concerning weld cracks of embed plates at the WNP-3 and 5 Site.

The Engineer states in this interim report that the final report will be submitted to the Supply System on January 1, 1982. We will provide the final report to the NRC by January 20, 1982.

Should you have any questions or desire further information please contact me directly.

Very truly yours,

R. S. Leddick

R. S. Leddick
Program Director, WNP-3/5

cc: J. Adams - PP&L
G. Smithpeter - BPA
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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

WPPSS NUCLEAR PROJECTS NO. 3 & 5

ENGINEERING INTERIM REPORT

WELD CRACKS AT CORNER JOINTS OF SHEARLUGS TYPE RP PLATES

AUGUST 20, 1981

INTRODUCTION

On April 9th, 1981, Fought Steel detected some weld cracks at corner joints of shearlugs on RP-28 embed plates at their fabrication shop in Portland, Oregon.

Cracks were found at corner joint where transverse and longitudinal shearlugs meet. Although design does not have any requirement to weld these two plates together, the vendor provided a small fillet weld at the joint where cracks were discovered. The lug-to-plate weld is designed to be a double bevel full penetration weld. However, Fought Steel provided a double bevel partial penetration weld.

Since Fought provides different types of RP plates, it was necessary to investigate whether this problem existed in other plates. An investigation was launched immediately. On April 10th, 1981, an NCR was generated to identify the crack problem in RP-28 plates. NCRs were generated to identify and control RP-type plates and weld types. May 12th, 1981, NRC was notified of the deficiencies in accordance with the provisions of 10CFR50.55(e).

A. POTENTIAL PROBLEMS AND REFERENCE TO THE NOTIFICATION

Potential problems have been identified in NCRs and the NRC had been notified of the deficiencies in accordance with the provisions of 10CFR50.55(e).

The potential problems are discussed below:

Fought identified the problem at the shop during straightening the plate which warped due to welding shearlugs. Engineering investigation revealed that Fought had been following the cold-straightening procedure to correct any warpages which occurred due to welding.

Fought continued the weld across the corner joint with a thin weld pass. This created two problems:

1) possibility of crack just in vertical joint section of weld

2) possibility of crack propogating into the base metal

Due to these defects the plate would have been functionally insufficient to support the loads. These plates were sent back to the fabricator.

B. APPROACH TO THE RESOLUTION OF THE PROBLEM

There are one hundred and sixty-seven (167) plates of eleven (11) RP types subject to investigation. Three (3) plates of the RP-29 type were embedded in concrete, the rest were readily accessible for inspection. An inspection plan was implemented to NDE the weld in all corners formed by intersecting shearlugs and rework as directed by the Engineer if required.

C. STATUS OF PPOPOSED RESOLUTION

All plates were inspected either by MT, PT or UT. Eight (8) RP-28 plates and two (2) RP-33 plates were found to have cracks. The remaining plates did not have defects and were accepted. To eliminate future problems, all plates were reworked to remove the corner weld. The three (3) embedded RP-29 plates showed no defects in UT examination. No other RP-29 plates had defects. On the basis of these observations RP-29 plates were accepted.

D. REASON WHY THE FINAL REPORT WILL BE DELAYED

In addition to the weld crack problem, a recent investigation revealed that the plates were not post weld heat treated as required by Specification 3240-448. Engineering requires additional time to evaluate the effects of bypassing post weld heat treatment. Upon completion of this investigation a final report will be issued.

E. PROJECTED COMPLETION OF CORRECTIVE ACTION AND SUBMITTAL DATE OF COMPLETE REPORT

A comprehensive analysis and engineering evaluation of these plates will be completed by December, 1981 and the final report will be submitted to Supply System by January, 1982.