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AUTH.NAME AUTHOR AFFILIATION
RENBERGER,D.L. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
ENGELKEN,R.H. Region 5, San Francisco, Office of the Director

SUBJECT: Forwards deficiency rept re possible failure of portion of pipe whip restraint structure in main steam tunnel.

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TITLE: CONSTRUCTION DEFICIENCY REPORT (10CFR50.55E).

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Washington Public Power Supply System
A JOINT OPERATING AGENCY

P. O. Box 968 3000 Geo. Washington Way Richland, Washington 99352 Phone (509) 375-5000

May 31, 1979
G02-79-111

Nuclear Regulatory Commission
Region V
Office of Inspection and Enforcement
Suite 202, Walnut Creek Plaza
1900 N. California Boulevard
Walnut Creek, California 94596

Attention: Mr. R. H. Engelken, Director

Subject: WPPSS NUCLEAR PROJECT NO. 2
DOCKET NUMBER 50-397, CPPR-93
REPORTABLE DEFICIENCY - 10CFR50.55(e)

Dear Mr. Engelken:

In accordance with the provisions of 10CFR50.55(e), your staff was informed by telephone on April 27, 1979, of a reportable condition involving a possible failure of a portion of the Pipe Whip Restraint Structure in the Main Steam Tunnel.

Attached is our report of this deficiency.

Please contact us if you have additional questions.

Very truly yours,

DL Renberger

D. L. RENBERGER
Assistant Director
Technology

DLR/RPS/ln

Attachment: As stated

cc: JJ Verderber - B&R, w/att
JJ Byrnes - B&R, w/att
C Bryant - BPA, w/att
JG Davis, Director, NRC, Washington, D.C., w/att
WNP-2 Files, w/att

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PDR
7906080301

79-86

Attachment
G02-79-111

WPPSS NUCLEAR PROJECT NO. 2
REPORTABLE DEFICIENCY AND CORRECTIVE ACTION FOR DEFECTIVE STEEL PLATE USED IN SUPPORTING STRUCTURE FOR PIPE WHIP RESTRAINTS IN MAIN STEAM TUNNEL

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
DOCKET NO. 50-397
LICENSE NO. CPPR-93

Nature of Deficiency

ASME SA-537 Class II steel from U. S. Steel Co. heat W74206 used in the main steam tunnel pipe whip restraint support structure was found to have extensive internal cracking as revealed by ultrasonic examination of an installed component. Examination of the SA-537 Class II steel in the installed component was undertaken after cracking of material from the same heat was observed during fabrication, and subsequent examination of samples from material still in the fabrication shop indicated extensive cracking was present. The cracking was attributed to overheating during the rolling or heat treatment process, and was concluded not to be laminations or lamellar tearing. The cracking is considered to be an injurious defect, and as such this deficiency was concluded to constitute a failure to meet ASME SA-20 performance specifications.

In addition, extensive cracking was observed on the edges of a second heat (T68042) of SA-537 Class II steel plate manufactured by U. S. Steel Co., upon receipt at the fabricator's shop. This material was rejected and was not used in fabrication.

Safety Implications

If the SA-537 material remained as installed in the main steam tunnel pipe whip restraint supporting structure, and was subjected to pipe whip impact loads, resulting from a pipe break in a reactor feedwater line, the component could fail and prevent the pipe whip restraint structure from restraining the motion of the ruptured pipe. This could result in loss of containment integrity through damage to the reactor feedwater isolation valve or feedwater piping upstream of the isolation valve.

Corrective Action Taken

All SA-537 material from the heat found to have internal cracking was rejected. This includes the single component installed in the main steam tunnel, other components shipped to the site but not installed, components in fabrication, and raw material in the fabricator's shop. Replacement SA-537 Class II steel plate has been ordered.