Docket No. 50-397

50.55(e) Report

Washington Public Power Supply System

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Docket No. 50-397

November 8, 1982
G02-82-898

Mr. R. H. Engelken
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 #201
JOHNSON CONTROLS DESIGN ISSUE

References: 1) Telecon dated July 20, 1982, R. T. Johnson to Tony D'Angelo, same subject.

2) Interim Report dated August 18, 1982, R. G. Matlock to R.H. Engelken, same subject.

In accordance with the provisions of 10CFR5C.55(e), your office was notified, by telephone, of the above subject reportable condition on July 20, 1982. Attachment A provides the Project's final report on this subject and Attachment B provides a brief description and function of the lines involved.

If you have any questions regarding this subject, please contact Roger Johnson, (509) 377-2501, extension 2712.

R. G. Matlock
Program Director, WNP-2

LCF/kd

Attachments: A. Final Report
B. Description and Function of Lines

cc: W.S. Chin, BPA
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NRC Document Control Desk
WNP-2 Files (917B)

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ATTACHMENT A

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
NUCLEAR PROJECT NO. 2
DOCKET NO. 50-397
LICENSE NO. CPPR-93
10CFR50.55(e) CONDITION #201
JOHNSON CONTROLS DESIGN ISSUE

FINAL REPORT

DESCRIPTION OF POTENTIAL DEFECT OR NONCOMPLIANCE

Burns and Roe (BRI), the Architect-Engineer, conducted a Technical Audit of Johnson Controls Incorporated (JCI) to confirm instrumentation piping design adequacy. The JCI organization performs small bore (1" and under) piping design work on the WNP-2 Project. JCI requires design information from BRI to perform their design work. The audit determined that the large bore piping thermal movement data being utilized by JCI could not be traced to BRI documentation. The information that was being utilized was also found to be discrepant. A reevaluation of the design utilizing the most current thermal movement data provided by BRI resulted in identification of eight small bore pipe lines which were overstress by ASME Code criteria.

ANALYSIS OF SAFETY IMPLICATION

Based on the most conservative assumption that the overstressed condition would have led to simultaneous multiple small bore piping failures, there would have been a loss of various instrumentation. The most significant instrumentation loss would have been the automatic main steam line isolation and feedwater control on steam line "D." A total of eight lines were identified which were determined to be overstressed. They are identified on Attachment B with a brief description of their function. They do not all have a function which, if nullified, would be reportable under 10CFR 50.55(e), but are included for completeness.

CORRECTIVE ACTIONS TAKEN

BRI has provided JCI with the latest thermal displacement data and will ensure that this data is maintained up to date. JCI has completed a reevaluation of their lines with the new thermal displacement data. No lines, other than the 8 lines identified in Attachment B, are affected. Field direction has been issued and has been completed to resolve the concern.

ATTACHMENT B

Pen No.	
X-37f*	HP leg for RHR-DPIS-12B (E31-N012B). Instrument monitors for high flow rate in the RHR suction line from the Reactor and isolates the RHR system on high flow caused by a leak in the RHR system. The loss of the HP leg would cause the instrument to indicate minimum flow disabling this safety feature.
X-39e	HP leg for RHR-DPIS-29B (E12-N029B). Instrument monitors the differential pressure between RHR loops B and C return lines at the Reactor Vessel to detect leaks. Loss of the HP line will cause an annuciator alarm.
X-42a*	HP leg for RFW-DPT-3D (C34-N003D), MS-DPIS-11C and MS-DPIS-11D. I - RFW-DPT-3D would sense minimum flow and transmit this causing: a) Zero flow indication on Flow ind. at H13-P603. b) Steam Flow Recorder on H13-P603 would decrease by 25%. c) Feedwater control system would sense a 25% reduction in steam flow and attempt to compensate. d) High flow alarm would be disabled. II - MS-DPIS-11C and 11D would sense minimum differential pressure disabling the high flow trip circuits to isolate the main steam valves on a high steam flow caused by a large steam leak. This is a prime safety function which would be disabled.
X-42d	Air supply to the air operator for RHR-V-50A, upon a line failure testable check valve. The valve will function properly, however, the capability to test the valve would be lost.

* Safety Related

Pen No.	
X-69a*	HP leg to MS-DPIS-11A and 11B are additional channels of leak detection as MS-DPIS-11C and 11D and would fail as described under X-42a (II).
X-69c	Air supply to the air operator for RHR-V-50B (same as above).
X-73e	Sample return from radiation detector RAO-RE-12B in S-SR-21. The break of this line would have minimal affect unless it pinches closed which would disable this monitor. There is a redundant monitor in S-SR-20 which would be unaffected.
X-75e*	HP leg to RRC-FT-11B (B35-NO11B), RRC-FT-24A (B35-NO24A) and RCC-FT-24B, (B35-NO24B). I - Loss of RRC-FT-11B would cause the comparator circuit in the recirc control system to sense a large flow between demand and actual flow which would: a) If not in auto, prevent auto operation. b) If in auto, sense low flow and attempt to compensate. II - RRC-FT-24A and 24B would sense zero flow which would: a) Indicate zero flow for loop B on RRC-FR-614 on H13-P602. b) Rod Block by Comparator circuits monitoring flow between RRC-FT-14A and RRC-FT-24A and between RRC-FT-14B and RRC-FT-24B.

* Safety Related