

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-397/83-24

Docket No. 50-397

Licensee: Washington Public Power Supply System
P. O. Box 968
Richland, Washington 99352

Facility Name: Washington Nuclear Project No. 2 (WNP-2)

Inspection at: WNP-2 Site, Benton County, Washington

Inspection conducted: June 13-23, 1983

Inspectors: R. P. Haist
D. P. Haist, Reactor Inspector

7/21/83
Date Signed

Approved By: R. T. Dodds
R. T. Dodds, Chief,
Reactor Projects Section No. 1
Reactor Projects Branch No. 1

7/21/83
Date Signed

Summary:

Inspection from June 13-23, 1983 (Inspection Report No. 50-397/83-24)

Areas Inspected: Routine, unannounced inspection by a regional-based inspector of licensee identified construction deficiencies (10 CFR 50.55(e) reports). The inspection involved 52 inspection hours onsite and eight inspection hours in the regional office by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

a. Washington Public Power Supply System

- +*K. T. Johnson, Project Quality Assurance Manager
- +*L. C. Floyd, Senior Quality Assurance Engineer
- *R. B. Glasscock, Director, Licensing and Assurance
- *G. H. Wooley, Manager, Procurement Quality Assurance

b. Bechtel Power Corporation

- *D. Johnson, Manager of Quality Assurance
- D. Cosgrove, Quality Assurance Engineer

*Denotes attendance at Exit Interview on June 17, 1983.

+Denotes attendance at Exit Interview on June 23, 1983.

2. Licensee Action on 10 CFR 50.55(e) Construction Deficiencies

a. Low Pressure Core Spray (LPCS) and Residual Heat Removal (RHR) Pump Support Pin Receptacles (NRC No. 83-01-D; Licensee No. 232)

The licensee notified the NRC that the RHR and LPCS pump cans were installed in concrete pits which were not provided with receptacles designed to mate with the lower portion of the pump can and thereby provide seismic restraint in a lateral direction.

The inspector investigated the circumstances behind this deficiency and determined that the apparent cause was failure by the NSSS supplier, General Electric, and the pump supplier, Ingersoll-Rand, to include requirements for the receptacles in interface documents and pump outline drawings supplied to the architect-engineer. The receptacle requirements were first specified in January 1975 in the pump installation and maintenance manual and were never specified on the pump outline drawings. The failure by the civil/structural design organization to include this requirement does not appear to be attributable to a breakdown in design internal interface controls, but rather appears to be an isolated occurrence. There are no other such design requirements specified in the pump installation/maintenance manuals.

Disposition of this deficiency consisted of an analysis of the pumps, without the lower lateral support, by General Electric and communications with the pump supplier regarding pump shaft stability without the lower lateral support. General Electric has consulted with the pump supplier and has confirmed that since the primary design purpose of the lower lateral support is stress related, the vendor feels that the pin receptacle is not needed for shaft stability.

The inspector verified that General Electric has reanalyzed the pumps from the standpoint of seismic and new loads (Analyses Nos. DRF-E12-45 and DRF-E21-41), existing vibration data, and shaft stability and has found omission of the lower lateral support receptacles presently acceptable. These corrective actions appear to be satisfactory.

This item is considered closed.

b. Rayproof 8-H Special Doors (No. 82-09-B; Licensee No. 212)

The licensee reported that special interior watertight doors failed leak tests when they were subjected to hydrostatic pressure applied in a direction which unseats the door from the frame. These doors are required to provide watertight compartments for safety-related pumps located in the basement of the reactor building. Corrective actions included the addition of five doors installed on the opposite side of the door opening as counterparts to existing doors. The licensee's analysis of the deficiency and draft interim report concluded that doors R4, R5, R8, R12, and R13 were acceptable as installed since they are located in the stairwells and there are no pipes in the stairwell to break and cause excessive leakage.

The inspector verified the installation of counterpart watertight doors at locations R6a, R7a, R9a, R10a, and R11a but questioned the effect on the analysis and interim report of a fire protection line and 24-inch condensate line (No. 351) in the stairwell adjacent to the low pressure core spray room and the residual heat removal pump 2C room. Since counterpart doors were not installed at the entrances to these rooms, leakage from stairwell line breaks would be assumed to affect these pump rooms. The licensee stated that the 24-inch condensate line had not been considered in the analysis and that the final 10 CFR 50.55(e) report would be revised and the effect of the line would be analyzed.

This item remains open.

c. Hangers Not Installed in Turned-Over System (No. 83-01-F; Licensee No. 229)

The licensee notified the NRC on January 27, 1983, that System 7.1 (High Pressure Core Spray) had been turned over to the Test and Startup organization with two seismic snubbers/sway braces missing. Corrective action included a review and update of the Hanger Drawing Control List (HDCL) to ensure that the HDCL reflects all current designs.

The review and updating of the HDCL was documented and verified by the inspector, however the apparent cause of the deficiency was not an out-of-date HDCL, but rather a failure by the Bechtel system engineer to rely on the HDCL as the primary document for determining current hanger drawings and reconciling differences between the HDCL and the isometrics and as-built configurations.

Since this cause was not discussed in the licensee's report, the inspector attempted to verify the adequacy of corrective actions to prevent recurrence of this deficiency. The inspector was informed that Bechtel field engineers had been given instructions on the use of the HDCL and that a review had been performed on systems turned over prior to discovery of this deficiency against the HDCL, to ensure that all hangers are installed on those systems. There was no documentation available to substantiate these assertions so the inspector was unable to verify that they had, in fact, been accomplished.

This item remains open pending confirmation that effective corrective actions have been accomplished.

d. Main Steam Isolation Valve Leakage Control System (No. 82-12-B; Licensee No. 218)

The licensee notified the NRC, on November 18, 1982, that valve MS-V-146, which is required to close following a design basis accident to enable the main steam isolation valve leakage control system to perform its function, was not provided with electrical power from a critical bus.

Corrective actions included issuance of a project engineering directive (PED) to provide essential power to the valve. The inspector verified that this design change was issued for construction but was unable to determine the cause of the failure to provide essential power to the valve and whether or not this problem could exist elsewhere in the main steam isolation valve leakage control system or in other systems. The licensee will investigate these issues to determine if effective corrective actions have been taken.

This item remains open.

e. Test Specimen Failure (No. 83-03-A; Licensee No. 238)

The licensee notified the NRC, on March 8, 1983, that main control room and cable spreading room HVAC temperature control modules failed during qualification testing. It was subsequently determined that the modules are not required for maintenance of a safety related function and that the failure was therefore a non-reportable deficiency.

The inspector examined the circumstances behind the failure and the licensee's corrective actions. Documentation of the deficiency indicated that initially, the units were tested at ten amperes which caused the printed circuit board traces to fail. Following the installation of jumpers, the units were successfully tested at two amperes, however, the licensee's report indicated that the unit operating currents are 6.5 amperes inrush and 0.47 amperes holding current. This information was developed by the licensee's engineering organization and was apparently not formally transmitted to either the equipment qualification group (for

equipment testing) or to the architect engineer (for concurrence). The adequacy of the two ampere qualification test for equipment that will experience 6.5 amperes inrush current has not been formally addressed. Additionally, formal verification that these temperature control modules are not used in safety significant applications was not available. The licensee will investigate these issues to determine that an adequate evaluation of this deficiency has been performed and that adequate controls are being applied to the transmittal of equipment performance standards data from the engineering to the equipment qualification organization.

This item remains open pending reexamination of these issues.

f. Emergency Diesel Generators DG-1 and DG-2 Airstart Circuits
(No. 82-09-A; Licensee No. 210)

The licensee informed the NRC on September 8, 1982, of a deficiency in the diesel generator air start circuit that selects one of two air receiver tanks to provide air to start the diesel generators. The failure of the air start circuitry to transfer from one air receiver to the other air receiver will result in less than the design basis availability of starting air for the diesel generators.

The licensee diagnosed this deficiency as being attributable to oxidization of the silver plated relay contacts and low coil current to the relay coil which is wired in series with the relay contacts. Corrective actions included discussions with the relay manufacturer and a decision to have the relay contacts gold plated or replaced with gold contacts.

The inspector verified that project engineering direction had been given to replace the contacts but was unable to verify that the diesel generator maintenance manual or any other tracking document had been revised or issued to indicate that gold contacts were necessary when replacing this relay during future maintenance. Additionally, the replacement relay does not have a unique part number or other identifier to indicate the presence of gold contacts. The licensee will take action to ensure that spare parts and replacement parts reflect this design change.

The inspector further questioned whether or not this air start circuit is adequately designed since it appears to be unstable during the transition from one position (one tank) to the other position (alternate tank). The licensee will reexamine the engineering evaluation of this deficiency to assess its adequacy.

This item will remain open pending resolution of these issues.

g. Items Determined Not-Reportable

The inspector reviewed the documentation and records associated with the following items which were initially reported to the NRC as Potential Construction Deficiencies but were subsequently determined by the licensee to be not reportable under the provisions of 10 CFR 50.55(e). The inspector verified that an adequate evaluation of the reportability was performed and that adequate corrective action was taken where warranted, including

consideration of cause and generic aspects of the particular deficiency. As a result of this review the following items are closed:

- . Damage of Electrical Cable During Installation of Thermo-Lag (No. 83-02-A; Licensee no. 235)
- . Incorrect Quality Classification on Standby Service Water Flow Indication Cables (NRC No. 83-01-B; Licensee no. 224)
- . Deficiencies in Special Doors and Hatches (other than Model 8H Waterproof Doors) (NRC No. 80-11-B; Licensee no. 89)

3. Management Meeting

The inspector met with the licensee management representatives denoted in paragraph 1 at the conclusion of the inspection on June 17 and 23, 1983. The scope of the inspection and the observations and findings of the inspector were discussed. The inspector emphasized the need for a thorough understanding of the nature of reportable or potentially reportable deficiencies by licensee personnel who provide prompt notification to the NRC of these deficiencies. The inspector also emphasized the need to closely follow the provisions of 10 CFR 50.55(e) and 10 CFR 50 Appendix B Criterion XVI. Specifically discussed were the provisions of 10 CFR 50.55(e) which requires sufficient information in written reports to permit NRC analysis and evaluation of the deficiency and corrective action, and Criterion XVI which requires, inter alia, a determination of the cause of the condition adverse to quality, corrective action to preclude repetition, and documentation of the cause and corrective action. The inspector informed the licensee that it is apparent that in some cases, the organizations involved did not understand these principles or have not documented their consideration of these principles. The licensee acknowledged these concerns.