U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No: 50-397/85-02

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

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

Docket No: 50-397

License No: NPF-21

Inspection at: WNP-2 Site near Richland, Washington

Inspectors: PP Narbut for — 3/7/85
A. D. Toth, Senior Resident Inspector — Date Signed

PP Narbut for — 3/7/85
R. S. Waite, Resident Inspector — Date Signed

Approved by: PP Narbut for — 3/7/85
P. H. Johnson, Chief — Date Signed
Reactor Projects Section 3

Summary:

Inspection on January 5 - February 2, 1985 (Report No. 50-397/85-02)

Areas Inspected: Routine, unannounced inspection by the resident inspectors of control room operations, engineered safety feature status, surveillance programs, maintenance programs, and licensee actions on previous inspection findings.

The inspection involved 227 inspector-hours onsite by two resident inspectors, including 21 hours during backshift work activities.

Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

Washington Public Power Supply System

R. Corcoran, Operations Manager
K. Cowen, Technical Manager
D. Feldman, Plant Quality Assurance Manager
J. Landon, Maintenance Manager
*J. D. Martin, Plant Manager
J. Peters, Administrative Manager
P. Powell, Licensing Manager
*C. Powers, Assistant Plant Manager
*J. Shannon, Director of Power Generation
M. Wuesterfeld, Reactor Engineering Supervisor
*D. Mazur, Managing Director

*Personnel in attendance at exit meeting February 1, 1985.

The inspectors also interviewed various control room operators, shift supervisors and shift managers, engineering, quality assurance, and management personnel relative to activities in progress and records.

2. General

The senior resident inspector and/or the resident inspector were onsite Janurary 7-10, 14-18, 21-26, 28, 31 and February 1, 1985. Back-shift inspections were conducted January 8, 9, 14, 15, 17, 24, 26, 28, 30, and February 1, 1985.

Several regional office inspectors visited the site this month for routine inspection activities. Their activities were documented in other separate inspection reports. These included:

A regional operations inspector (Mr. D. Willet) was onsite January 7 - 11 and January 21 to February 1, 1985. A regional radiation protection inspector (Mr. C. Sherman) was on site January 7 to January 11, 1985.

The Regional Administrator (Mr. J. B. Martin) was onsite January 8-9, 1985.

The responsible Regional Section Chief (Mr. P. Johnson) was on site January 22-25, 1985.

A regional emergency preparedness inspector (Ms. G Temple) was on site January 15 - 18, 1985.

3. Plant Status

The plant operated at 100 percent power level for most of the month. On January 31, 1985 at 7:57 a.m., a reactor scram occurred due to a fault in some electrical protection circuitry. During the scram the reactor level dropped to the level 2 setpoint causing an initiation and injection by

the high pressure core spray system as expected. This promptly restored reactor vessel level.

On January 10, 1985, the licensee announced retirement of the Deputy Managing Director (Mr. A. Squire), and a consequent reorganization to become effective by April 15. The Deputy Managing Director position will be taken by Mr. J. Shannon, Mr. J. D. Martin will take the position of Assistant Managing Director for Operations, and Mr. C. Powers will assume the position of Plant Manager (WNP-2). Additionally, the Plant Quality Assurance Manager position has been assumed by D. Feldman.

4. Operations Verifications

The resident inspectors reviewed the Control Room Operator and Shift Manager log books on a daily basis for this report period. Reviews were also made of the Jumper/Lifted Lead Log and the Nonconformance Report Log to verify that there were no conflicts with Technical Specifications and that the licensee was actively pursuing corrections to conditions listed in either log. Events involving unusual conditions of equipment were discussed with the control room personnel available at the time of the review and evaluated for potential safety significance. The licensee adherence to LCO's, particularly those dealing with ESF and ESF electrical alignment, were observed. The inspectors routinely took note of activated annunciators on the control panels and ascertained that the control room licensed personnel on duty at the time were familiar with the reason for each annunciator and its significance. The inspectors observed access control, control room manning, operability of nuclear instruments, and availability of onsite and offsite electrical power. The inspectors also made regular tours of accessible areas of the facility to assess equipment conditions, radiological controls, security, safety and adherence to regulatory requirements.

a. Containment Isolation Valve Positions

The inspector examined containment isolation valves for condition, position and chain locks (where required) for vent and drain lines of the reactor feedwater system. He also observed plant equipment operators perforimin similar inspections, including independent verification, for instrument line penetrations at elevation 501.

b. Off-Gas Pretreatment Monitor

During the daily walkdown of the control room panels on January 21, 1985, the inspector observed the Offgas Pretreatment Radiation Monitor indicating downscale at 100 percent power. It appeared that this monitor had indicated downscale for approximately 46 hours following the initial operation of the Offgas system following the scram on January 17, 1985. During subsequent investigation the inspector identified that during the two previous scrams on December 28 and January 1, 1985, the monitor had indicated downscale for 30 hours and 24 hours respectively. The inspector discussed this apparent abnormality, as well as other apparent indications of inoperability, with the health physics/chemistry manager and his staff and the system engineer. It appears that the flow through

this sampling line varies depending on moisture content in the line. When the amount of moisture is large the flow is significantly reduced causing the monitor to range downscale. The system engineer has initiated preparations to install heat tracing on this line to help reduce the moisture content. Members of the health physics/chemistry staff are performing evaluations of the three above incidents to determine whether the Pretreatment Monitor was technically inoperable during these periods. The results of this examination will be the subject of future inspection.(Followup Item 85-02-01).

During the above inspection it was determined that Technical Specification 3.3.7.12, Action 114, which applies to the Offgas Pretreatment Monitor is not in accordance with the Standard Technical Specifications and that a possibility for misinterpretation exists. The licensee has discussed this item with the NRC regional office staff and committed to initiate a Technical Specification change to correct this discrepancy.

No violations or deviations were identified.

c. Licensee Action On "Nuisance" Alarms

On January 22 the inspector examined the basis for the continued activated status of several control room annunciators. These are alarms which the operating staff had come to accept as non-relevent routine alarms.

(1) Area Radiation Monitor Downscale

This alarm indicates that one of several area radiation alarm devices is reading downscale. The annuciator was activated due to a high radiation level detector/alarm associated with possible accident conditions. Due to the existence of normal plant conditions, radiation levels were so low that the instrument was not yet on-scale, therefore the downscale alarm was continously activated. This condition persisted since at least April 9, 1984, such that the operators generally dismissed the alarm as non-relevent. Similarly, the instrument checks each shift involved recording the readings on such instruments, which in this case were meaningless as far as verifying proper operation of the detector. The original engineering solution planned was to install a "bug-source" to always maintain the instrument on-scale. However, upon installation, the Americium source resulted in radiation levels nearby in the range of 300 mrem, which was unacceptable. The current planned solution in-progress is to eliminate the downscale alarm altogether (PMR-84-1579).

(2) Off-Gas Adsorber Flow High/low

This alarm was valid, in that the flow of 70 SCFM exceeded the alarm setpoint of 24 SCFM. However, the operators dismissed the alarm as not relevent, since it was known that the main

condenser in-leakage has not yet been brought down sufficiently to maintain the off-gas system flow to within the design 30 SCFM.

(3) Off-Gas Exhaust Flow High/low

This alarm was valid, and routinely dismissed, for the reasons stated in item (2) above.

(4) Off-Gas Adsorber Vault Low Temperature

This alarm was valid and corresponded to the -7 F indication on the flow recorder (alarm setpoint -7 F). The shift manager stated that even colder temperatures would be acceptable and desirable, and the alarm could be dismissed.

(5) Off-Gas Absorber Vessel High Temperature

This alarm was not valid in that the trip mechanism in the recorder had jammed and not cleared after the operators acknowledged the alarm after a system transient. The shift manager freed the mechanism after the inspector brought it to his attention.

(6) Off-Gas Glycol Storage Tank Low Temperature

This alarm was not valid, in that the measured temperature (35 F) was greater than the alarm temperature (31 F).

Following questioning by the inspector and review of the alarms and alarm procedures, the shift manager prepared maintenance work requests to obtain repairs or changes in setpoints of the annunciators. These were subsequently found on the action list maintained by the operations coordinator who had been assigned to solicit and expedite action on control room "Hot Maintenance Items". The coordinator described that elimination of control room nuisance alarms was a particular element of his activities, which had been initiated in December 1984. Such management emphasis appears responsive to what appeared to be a growing insensitivity of operations staff to uncorrected nuisance alarms, and the issue of operations staff attentiveness to plant details. Such activities will continue to be subject of routine NRC inspections.

No violations or deviations were identified.

d. Main Steam Leakage Control System Flow Indication

The inspector noted that flow indicators were on-scale, indicating flow through the vent line of the condensing chamber upstream of the discharge fan to the standby gas treatment system. The system was not in operation and any flow indication was inappropriate. This fact had not been identified and resolved by the reactor operations staff at the time of inspection. Discussions with the shift manager

and the system engineer led to the evaluation and conclusion that the system isolation valves were leaking slightly, with the flow being discharged to the reactor building through the vent line. The reverse flow indicated on the flow indicator was apparently due to condensation of water into the flow meter instrument lines, resulting in a bias in the flow signal. The existing configuration would have resulted in indicated flow rates higher than actual, during system operation. The flow indication was not an alarmed variable, and did not appear to be critical to system operation, other than for general verification that the system was in operation. The condition of condensation into pressure/flow indication instrument lines appears to be a common problem with several instruments at this plant, where the instrument line taps come off of the top of a steam/gas pipe and drops down to the transmitter at a lower elevation. The licensee actions to address the general extent of this problem will be examined during future inspections. (85-02-02)

No violations or deviations were identified.

e. Standby Liquid Control Storage Tank Chemical Bag

The inspector examined nonconformance report 84-798, and interviewed management and the responsible engineer relating to discovery of a plastic chemical bag wrapped around piping inside the standby liquid control borated water storage tank. The licensee speculates that the bag was dropped into the tank during chemical additions; management has elected to not attempt to identify the specific individuals responsible.

The licensee staff has assessed the mixing and flow conditions of the tank for its different operational modes, the positions of the redundant discharge piping, the bouyancy of the material, and the likelyhood of the material blocking the discharge piping at any time during its presence in the tank. The licensee conclusion that the system was operable was reviewed and found to be supportable. The licensee therefore determined the matter was not reportable. Corrective actions included removal of the bag, the provision of a screen for use during chemical addition activities, a procedure revision to call for use of the screen for such chemical additions, and a review of the occurrence with the chemistry technicians who may be involved in such chemical addition activities in the future.

No violations or deviations were identified.

5. Surveillance Program Implementation

The inspectors ascertained that surveillance of safety-related systems or components was being conducted in accordance with license requirements. In addition to the observation and sometimes verification of daily control panel instrument checks, the inspectors observed portions of several surveillance tests by operators and instrument and control technicians. Typical activities included the following:

a. Calibration of area temperature monitors

The monthly check of temperature monitors requires that the thermocouple leads be lifted and a standard temperature or voltage signal be inserted to the meters/alarms. The repeated manipulation of the wires, and tightening of screws has prompted the licensee to install special lugs on the wires to reduce wear on the wire strands.

b. Calibration of automatic depressurization system timers

The check/calibration of the timing devices requires installation of electrical jumpers across contacts of certain relays. This requires the electrician to enter the control room relay cabinet. Access requires the electrician to place his feet upon large instrument/electrical cables which are draped over the top of I-beam sections. Although no apparent damage has resulted from this activity, it appears that this is not particulary good practice. The practice could, in the inspector's view, ultimately result in some degradation of the cables. The inspector identified this to the plant management as an area of possible improvement.

c. Calibration of average power range monitors

The observed weekly check identified slight drifting of the setpoint, and led to calibration by adjustment of small potentiometers on the instrument card.

No violations or deviations were identified.

6. Monthly Maintenance Observation

Portions of selected safety-related systems maintenance activities were observed. By direct observation and review of records the inspector determined whether these activities were violating LCOs, that the proper administrative controls and tagout procedures were followed, and that equipment was properly tested before return to service; and independently verified that the equipment was returned to service. The inspector also reviewed the outstanding job orders to determine if the licensee was giving priority to safety-related maintenance and to verify that backlogs which might affect system performance were not developing.

The inspector examined the weld material issuance station for licensee maintenance personnel and Bechtel support staff, and interviewed the attending personnel. The inspector observed orderly storage of welding material in separated cubicles, proper identification and color coding of materials of different compositions, proper oven storage of coated electrodes, adequate instructions and records for the issuance of materials, proper provisions which enable the welding engineer to identify proper work/material/procedure/welder correlation prior to material issuance, proper records to verify qualification of the welder prior to material issuance, and proper instructions identifying contacts for questions which may arise during the attendants activities.

7. Licensee Actions on Previous NRC Inspection Findings

The inspectors reviewed records, interviewed personnel, and inspected plant conditions relative to licensee actions on previously identified inspection findings:

a. (Closed) Followup item (84-01-02) Thoroughness of Preplanning of Maintenance Activities

There appeared to be a need for more thorough preplanning of maintenance activities. The Maintenance Work Request (MWR) includes appropriate provisions for clearance orders and mandatory requirements for detailed conduct of work. However, there did not appear to be a defined mechanism for the technical staff, who originate the MWR and have occasion to deeply explore the interfaces of the system, to offer recommendations and cautions to the operations staff relative to preparing the plant status for the work.

Additional policies and procedures were instituted in plant procedures PPM-10.1.6 and 10.1.11. Additionaly, daily maintenance coordination meetings, with maintenance, technical and operations staffs provides for review of proposed maintenance activities for the current and planned operational modes. Additionally, each system has an assigned systems engineer who, at his prerogative, may monitor the work and interface with the maintenance and operations staff for activities of complex or sensitive nature.

The inspector has not identified any significant trends in licensee event reports to suggest that these measures are ineffective. This item is closed.

b. (Closed) Followup item (84-09-03) Control of Troubleshooting Activities

The need for improved controls of troublshooting activities was discussed in NRC inspection reports 84-09, 84-19, and 84-31. This involved the consideration of control over plant maintenance personnel, contracted personnel, and preplanning of activities by such personnel, especially in the control room. Exisitng and revised maintenance procedures PPM-10.1.6 and 10.1.11 clearly establish policies for "Operations Supervisor analysis to permit proper control of work", and involvement of the Shift Manager "to judge whether the work can safely proceed after considering the plant mode". The procedures require "Any repair or modification work done on Quality Class I equipment will require an approved written procedure or work instruction", and "When in the process of troubleshooting... items requiring repair for which no procedure was specified, repair efforts should not proceed until the procedure or instruction is added to the work request and the Shift Manager concurs with this change to the work activity", and "Corrective action shall not be initiated until the problem has been thoroughly analyzed by Operations and Maintenance supervision...". Additionally, the licensee has currently instituted daily

maintenance planning meetings to permit Maintenance, Technology, and Operations representatives to conduct reviews of proposed daily maintenance work relative to current and planned plant status. A plant procedure has also been issued which provides for training and certification of vendor representatives who would work at the plant. This certification assures that such personnel are made aware of plant policies regarding preplanning efforts and coordination with the control room staff.

The above provisions address preplanning and supervision to avoid recurrence of previous plant transient events caused by vendor and plant personnel insufficiently considering the consequences of their troubleshooting efforts. This item is closed.

c. (Closed) Followup item (84-35-02) There were Discrepancies in Testing of Shutdown Cooling Control from the Remote Shutdown Panel

The licensee management reviewed the inspector's concerns in conjunction with the test results documented by the test engineers. The Plant Operations Committee (POC) reviewed the data and concluded that sufficient information had been obtained to achieve the test objectives of Regulatory Guide 1.68.2. Necessary revisions were identified for the control room evacuation procedure *4.12.1.1. Subsequently, the draft revision was applied at the plant simulator, where further desirable revisions were identified, prior to submittal to the POC for final approval.

The procedure allows for starting shutdown cooling when the reactor pressure reaches 125, use of the condensate system for automatic reactor level control, measurement of reactor metal cool-down rate temperatures at a local recorder in the reactor building, and it alerts the reactor operator to the reactor level guage inaccuracy relating to thermal calibration. The identified issues appear to have been resolved.

The proposed procedure revisions include addition of some operator actions to be completed in the control room prior to evacuation, including:

(1) Shut down a condensate and a booster pump (assure that only two condensate pumps and two circulating pumps are running). This provides for subsequent automatic control of reactor water level (after the reactor is depressurized from the remote shutdown panel) thereby reducing reliance on the reactor core isolation system.

(2) Change positions of five reactor feedwater valves to assure a flowpath for automatic water addition to the reactor vessel (after the vessel is depressurized from the remote shutdown panel).

(3) Shut down one circulating water pump (assure that only two are running), to assure later availability of a heat sink for the condensate system and feedwater system.

(4) Shut the reactor water cleanup system reject valve (to preserve water inventory in the reactor vessel).

(5) Shut two main steam drain isolation valves;

These actions are in addition to the previously prescribed actions of scram, move mode switch to shutdown, close main steam isolation valves, trip the generator, and transfer the recirculating water system pumps to low frequency motor generator mode.

This item is considered closed.

d. (Closed) Followup item (84-48-01) Valve Not Shown on a Drawing

NRC inspection report 84-35 stated a vent valve did not appear on the control room copy of the system flow diagram. During this inspection, the inspector verified that the vent valve was and had originally been on the drawing (M521). This item is closed.

8. WNP-2 Action On Matters Identified At WNP-3

The WPPSS WNP-3 organization filed a December 27, 1984, report to NRC under 10 CFR 50.55(e). The report discussed potential damage to control wiring within Westinghouse DS/DSL circuit breakers. The inspector ascertained that this information had been received at the WNP-2 site via a direct notification from Westinghouse in March 1984. The WNP-2 staff identified 45 similar breakers in 13 substations, and denergized and inspected 42 of these. No discrepancies were identified.

9. Management Meeting

On February 1, 1985, the inspectors met with the plant manager and his staff to discuss a summary of the inspection findings for this period. Attendees at this meeting are identified in paragraph 1 (*). Additionally, the inspector met with the Plant Manager weekly to review status of inspection findings, and weekly with the department managers to define data and information needs relevent to the inspections in progress.

The inspector emphasized that the tolerance of nuisance alarms for long periods of time, and the failure to recognize and effect corrective action for some (secondary) off-normal conditions, suggests that the area of operator attentiveness may benefit from additional management attention.