U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No: 50-397/87-32

Docket No: 50-397

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

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

Inspection at: WNP-2 Site near Richland, Washington

Inspection Conducted: December 14 - January 20, 1988

Inspector: for C. J. Bosted, Senior Resident Inspector — Date Signed: 2/9/88

Approved by: P. H. Johnson, Chief, Reactor Projects Section 3 — Date Signed: 2/9/88

Summary:

Inspection on December 14, 1987 - January 20, 1988 (50-397/87-32)

Areas Inspected: Routine inspection by the resident inspector of control room operations, engineered safety feature (ESF) status, surveillance program, maintenance program, cold weather preparations, licensee event reports, NRC Bulletin actions, and licensee action on previous inspection findings. During this inspection, Inspection Procedures 25076, 30702, 30703, 35701, 61702, 61726, 62703, 71707, 71709, 71710, 71714, 71881, 92700, 92701, and 92702 were covered.

Results: Of the eight areas inspected, no violations or deviations were identified. One inspector followup item was identified in paragraph 4.b.10. Sixteen followup items (including LERs and NRC Bulletins) were closed.

DETAILS

1. Persons Contacted

L. Oxsen, Assistant Managing Director for Operations
R. Glasscock, Director, Licensing and Assurance
*C. Powers, Plant Manager
J. Baker, Assistant Plant Manager
*R. Corcoran, Operations Manager
*K. Cowan, Technical Manager
*D. Feldman, Plant Quality Assurance Manager
*R. Graybeal, Health Physics and Chemistry Manager
J. Landon, Maintenance Manager
*J. Peters, Administrative Manager
P. Powell, Licensing Manager
*J. Harmon, Assistant Maintenance Manager
S. McKay, Assistant Operations Manager

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

*Attended the Exit Meeting on January 21, 1988.

2. Plant Status

At the start of the inspection period, the plant was operating at 94% power. Main Turbine Governor Valve Number 4 was being maintained closed due to an unresolved concern about the valve sticking. During turbine valve stroke tests, the number 4 governor valve had been observed to be sluggish when the valve was approximately 50% open. This item was resolved after further testing and consultation with the vendor. A surveillance test procedure was developed that required the valve motion to be monitored every two hours. The plant power was then increased with the limitation that the number 4 governor valve would be limited to less than 15% open (normally the valve is about 12% open at 100%). Power was increased to 100% on December 19. On this date, when ambient temperatures produced a low injection temperature, and condenser vacuum was ideal, the plant produced 1150 MWe for the first time. This set a new plant record for the most megawatts produced. The plant continued to operate at 100% until January 5 when power was reduced for a rod pattern sequence exchange. Power was increased back to 100% on January 8 following fuel operating limits. The plant operated at 100% through January 18 when the plant was shut down to repair a condenser tube leak. The unit was restarted January 19 and power was slowly increased, beginning on January 20, in accordance with fuel preconditioning guidelines.

3. Previously Identified NRC Inspection Items

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

a. (Closed) Followup Item (397/86-05-07): Emergency Lighting in Diesel Rooms Does Not Illuminate Panels.

During a walkdown of the Remote Shutdown Procedure, it was identified that the emergency light in the diesel generator room would not illuminate the diesel panel.

The inspector reviewed Plant Modification Request (PMR) 02-86-01777-0 that was completed June 2, 1987 which installed additional lighting in the areas of the diesel panels. The inspector observed the installed lighting and verified that the panels were adequately illuminated. This item is closed.

b. (Closed) Followup Item (397/86-05-10): Inadequate Fire Alarm Response by Plant Personnel.

It was identified that control room operators did not dispatch a member of the staff fire brigade when a "spurious" alarm was received on the annunciator panel. When management attempted to correct this situation by directing that a member be dispatched for a continuous alarm no direction was given as to what constituted a continuous alarm.

The inspector has observed that an operator is dispatched for any non scheduled fire alarm. The equipment operators are members of the fire brigade. This item is closed.

c. (Closed) Followup Item (397/86-05-13): Transfer Switches for Remote Shutdown Panel Not Installed.

Switches to isolate the Remote Shutdown Panel controls from the Control Room had not been installed at the time of the inspection. At the time of the inspection, the procedure required that leads be lifted to accomplish this isolation.

The inspector reviewed completed plant modification request (PMR) 2-86-0392-1 that installed these switches and inspected the remote Shutdown Panel and observed that the modification has been completed. Selector switches have been installed which isolate the Control Room controls and the procedures have been updated to reflect these changes. This item is closed.

d. (Closed) Followup Item (397/86-12-06): Insufficient Environmental Qualification Training for Quality Control Inspectors.

The inspection revealed that formal training of QC inspectors in the area of environmental qualification (EQ) had not been required.

The inspector reviewed an Interoffice Memorandum from the Quality Assurance Supervisor to the Administration Manager that documented the completion of training for the QA/QC department that included EQ training. This item is closed.

e. (Closed) Followup Item (397/86-12-07): Master Equipment List (MEL) is Out of Date With Installed Equipment.

Several items of equipment were listed on the MEL 19 months after that equipment was removed from the plant. The MEL needed to be updated in a timely manner.

Engineering Instruction 2.35 was revised on September 29, 1986. This revision set the criteria which established the update schedule for equipment removed or added to the plant. This was reviewed by the inspector and was found to be adequate. The discrepancies identified in the followup item had also been corrected. This item is closed.

f. (Closed) Followup Item (397/86-12-08): Non Conformance Reports (NCRs) Were Not Being Closed in a Timely Manner.

Three NCRs dealing with solenoid valves were not resolved in a timely manner. The licensee planned on having resolution to these NCRs before startup from refueling outage R-1.

The last of the three NCRs was finally completed by November 1986. NCRs 286-153 and 286-011 were closed in June 1986, and NCR 286-042 was completed in November 1986. This item is closed.

g. (Closed) Followup Item (397/86-36-01): Organizational Differences Between Technical Specifications and Final Safety Analysis Report (FSAR) Requirements

A discrepancy was identified between the Technical Specifications (TS) and the FSAR when the Organizational Structures were reviewed. Changes made to the TS and FSAR to reflect current plant staffing conditions did not include education or experience requirements for the new positions.

The plant QA organization reviewed the plant staffing against the requirements of the TS and FSAR. The inspector reviewed the results of the QA audit and Inter Office Memorandum between the QA Manager and Administrative Manager that described what changes needed to be included in the plant position descriptions. The inspector sampled the position descriptions to verify that the changes had been included. This item is closed.

4. Operational Safety Verification

a. Plant Tours

The following plant areas were toured by the inspector during the course of the inspection:

- o Reactor Building
- o Control Room
- o Diesel Generator Building
- o Radwaste Building
- o Service Water Buildings
- o Technical Support Center
- o Turbine Generator Building
- o Yard Area and Perimeter

b. The following items were observed during the tours:

(1) Operating Logs and Records. Records were reviewed against Technical Specification and administrative control procedure requirements.

(2) Monitoring Instrumentation. Process instruments were observed for correlation between channels and for conformance with Technical Specification requirements.

(3) Shift Manning. Control room and shift manning were observed for conformance with 10 CFR 50.54.(k), Technical Specifications, and administrative procedures.

(4) Equipment Lineups. Valves and electrical breakers were verified to be in the position or condition required by Technical Specifications and Administrative procedures for the applicable plant mode. This verification included routine control board indication reviews and conduct of partial system lineups.

(5) Equipment Tagging. Selected equipment, for which tagging requests had been initiated, was observed to verify that tags were in place and the equipment was in the condition specified.

(6) General Plant Equipment Conditions. Plant equipment was observed for indications of system leakage, improper lubrication, or other conditions that would prevent the system from fulfilling its functional requirements. During a walkdown of the Standby Gas Treatment systems on January 7 , the inspector noted that a tool box was near the filter unit for the 'B' SGT train. This tool box did not have the brake set. This concern was brought to the attention of maintenance management which acted promptly to have the tool box moved to another location and the box brake properly set. During this inspection period, the Low Pressure Core Spray system was painted as part of a pilot painting program for the plant. The inspector was told by plant management that this effort was part of an overall plant appearance improvement program that would continue.

(7) Fire Protection. Firefighting equipment and controls were observed for conformance with Technical Specifications and administrative procedures.

(8) Plant Chemistry. Chemical analyses and trend results were reviewed for conformance with Technical Specifications and administrative control procedures.

(9) Security. Activities observed are discussed in paragraph 9.

(10) Plant Housekeeping. Plant conditions and material/equipment storage were observed to determine the general state of cleanliness and housekeeping. Housekeeping in the radiologically controlled area was evaluated with respect to controlling the spread of surface and airborne contamination. During this inspection period, the inspector observed that plant cleanliness was starting to degrade. During the holiday period, management explained that additional time off was taken by the labor force so the normal sweeping and cleaning slowed down. The inspector also observed trash and debris inside several contaminated barriers. This was brought to the attention of the Radiation Protection management. Since housekeeping has been stressed in the past as item of concern, this item will be followed in a future inspection. Inspector Followup Item 87-32-01.

(11) Radiation Protection Controls. Activities observed are discussed in paragraph 8.

No violations of NRC requirements or deviations were identified.

5. Engineered Safety Feature System Walkdown

Selected engineered safety feature systems (and systems important to safety) were walked down by the inspector to confirm that the systems were aligned in accordance with plant procedures. During the walkdown of the systems, items such as hangers, supports, electrical power supplies, cabinets, and cables were inspected to determine that they were operable and in a condition to perform their required functions. The inspector also verified that the system valves were in the required position and locked as appropriate. The local and remote position indication and controls were also confirmed to be in the required position and operable.

Accessible portions of the following systems were walked down on the indicated dates.

System	Date
Diesel Generator Systems, Divisions 1, 2, and 3.	January 8
Hydrogen Recombiners	January 7
Low Pressure Coolant Injection, (LPCI) Trains "A", "B", and "C"	December 17
Low Pressure Core Spray (LPCS)	December 17,

High Pressure Core Spray (HPCS)	January 7
Reactor Core Isolation Cooling (RCIC)	December 17
Standby Liquid Control (SLC) System	January 8
125V DC Electrical Distribution, Divisions 1 and 2	January 19
250V DC Electrical Distribution	January 19

No violations of NRC requirements or deviations were identified.

6. Surveillance Testing

a. Surveillance tests required to be performed by the Technical Specifications (TS) were reviewed on a sampling basis to verify that: 1) the surveillance tests were correctly included on the facility schedule; 2) a technically adequate procedure existed for performance of the surveillance tests; 3) the surveillance tests had been performed at the frequency specified in the TS; and 4) test results satisfied acceptance criteria or were properly dispositioned.

b. Portions of the following surveillances were observed by the inspector on the dates shown:

Procedure	Description	Dates Performed
7.4.3.8.2.1	Monthly Turbine Valve Test	January 5
7.4.1.3.1.2	Control Rod Exercise	January 5
9.3.9	Control Rod Exchange	January 5
7.4.4.7	Main Steam Isolation Valve MS-V-28A Closure Test	January 18
7.4.1.5.2	Standby Liquid Control Boron Concentration Test	January 18
7.4.3.1.1.41	Average Power Range Monitor Channel 'E' Calibration	January 18
7.4.1.4.2.2	Rod Sequence Control System Operability Test	January 18
7.4.1.4.1.2	Rod Worth Minimizer Operability Test	January 18

No violations of NRC requirements or deviations were identified.

7. Plant Maintenance

During the inspection period, the inspector observed and reviewed documentation associated with maintenance and problem investigation activities to verify compliance with regulatory requirements, compliance with administrative and maintenance procedures, required QA/QC involvement, proper use of safety tags, proper equipment alignment and use of jumpers, personnel qualifications, and proper retesting. The inspector verified reportability for these activities was correct.

The inspector witnessed portions of the following maintenance activities:

Description	Dates Performed
Replace valve bracket on valve FPC V158 per AT 0818	December 22
Calibration of local regulator on REA 545-1 per AT 2076	January 7
Condenser tube leak trouble-shooting per MWR AT 3052	January 18
Condensate filter-demineralizer 'E' flange tightening per MWR AT 3078	January 18
Inspection of condensate filter-demineralizer 'C' & 'D' septa	January 18

A forced outage was required on January 18 due to a tube leak in the main condenser. After the water boxes were inspected, it was determined that the most probable cause of the leak was previously installed tube plugs becoming dislodged. These plugs were manufactured using a plastic type material and held in place by friction generated through the compression of an elastic washer. The material in the bolt and nut used for this compression was a polyethylene type substance. During the December outage, following the discovery of several missing plugs, the maintenance department determined that a small amount of torque would strip the threads on the bolt. The tube plugs were reinstalled and all plugs were checked during that outage for a torque value that was approximately one-half the torque that stripped the bolt threads. During the January outage, a plant design change was generated that changed the bolts and nuts to stainless steel. All tube plugs with the plastic bolts were changed to the new design.

Prior to the January 18 shutdown, the filter-demineralizers (F/D) 'C' and 'D' were experiencing higher than expected resin trap differential pressures. During the outage, the F/D covers were lifted and an inspection was made on the septa. The 'C' F/D had one septum lifted and the 'D' F/D had three septa raised about one inch. These septa were reseated and the F/D's were re-checked. During the December outage several septa were found to have become unseated during operation, causing the resin traps' differential pressure to increase. The inspector questioned plant management about the cause of the septa becoming unseated, but plant management stated that neither they nor the vendor had an explanation for the cause, and the problem would be further evaluated. Following the January 20 restart, higher than expected resin trap differential pressures were again observed on the 'C' and 'D' traps. After additional back washes with and without air sparging, plant engineers decided to not use the air sparge when back washing the 'C' and 'D' F/D's. The air sparging is used to apply additional cleansing to the septa and can increase the reverse differential pressures seen by the individual septum. Preliminary results at the end of the inspection period indicated that the differential pressures were about normal for the 'C' and 'D' traps.

No violations of NRC requirements or deviations were identified.

8. Radiological Protection Practices

The inspector periodically observed radiological protection practices to determine whether the licensee's program was being implemented in conformance with facility policies and procedures and in compliance with regulatory requirements. Areas observed included control point operation; records of licensee surveys; and postings of radiation, high radiation, and contamination areas within the radiological controlled area. The inspector also observed compliance with Radiation Exposure Permits, proper wearing of personnel monitoring devices, and personnel frisking practices. The inspector verified that health physics supervisors and professionals conducted frequent plant tours to observe activities in progress and were generally aware of significant plant activities, particularly those related to radiological conditions and/or challenges. ALARA consideration was given to maintenance activities observed by the inspector.

No violations of NRC requirements or deviations were identified.

9. Physical Security

The inspector periodically observed security practices to ascertain that the licensee's implementation of the security plans was in accordance with site procedures. The inspector observed that the number of guards was adequate for the requirements of the security plan; that the search equipment at the access control points was operational; that the protected area barriers were well maintained without breaks; and that personnel allowed access to the protected area were badged and monitored and the monitoring equipment was functional. Night illumination inside the protected area was observed and obstructions were lighted adequately. Surveillance equipment was also observed during this inspection.

No violations of NRC requirements or deviations were identified.

10. Licensee Event Report (LER) Followup

The following LERs associated with operating events were reviewed by the inspector. Based on the information provided in the report it was concluded that reporting requirements had been met, root causes had been identified, and corrective actions were appropriate. The below LERs are considered closed.

LER NUMBER	DESCRIPTION
LER 86-19	Non-Qualified Limitorque Motor Operated Valves
LER 87-01	Inadvertent Start of SGTS Due to Personnel Error
LER 87-03	Breach of Secondary Containment - Personnel Error
LER 87-05	RHR Containment Isolation - Personnel Error
LER 87-08	RHR Containment Isolation - Personnel Error
LER 87-09	Control Room Emergency Filtration Activation

The following LER package was reviewed by the inspector and based on a review of completed Design Change Package (DCP) 85-0632-0B and Maintenance Work Request (MWR) AU-2599 which installed the missing fire damper, the LER is considered closed.

LER 85-57 Missing Fire Damper ROA-FD-12

No violations of NRC requirements or deviations were identified.

11. Review of Periodic and Special Reports

Periodic and special reports submitted by the licensee pursuant to Technical Specifications 6.9.1 and 6.9.2 were reviewed by the inspector.

This review included considerations of report contents as required by NRC regulations; test results and/or supporting information consistent with design predictions and performance specifications; and the validity of the reported information. Within the scope of the above, the following report was reviewed by the inspector.

o Monthly Operating Report for December 1987.

No violations of NRC requirements or deviations were identified.

12. NRC Bulletins

a. Bulletin 85-03 Safety Related Motor Operated Valves

This Bulletin addressed a concern in which safety-related motor operated valves could fail during a subsequent operation following an initial operation. The Bulletin directed the licensee to implement a program to ensure that switch settings on safety-related motor operated valves are selected, set and maintained correctly to accommodate the maximum differential pressures expected.

The inspector reviewed the licensee's motor operated valve (MOV) program and witnessed several tests performed during the R-2 outage. The records for the high pressure core spray (HPCS) and reactor core isolation cooling (RCIC) were also reviewed. Members of the licensee's staff told the inspector that the licensee has plans to expand the testing program to include all MOV's. The inspector also reviewed the licensee's response to the Bulletin, as contained in Supply System letter G02-87-290 dated December 18, 1987. This item is closed.

b. Bulletin 87-02 Fastener Testing to Determine Conformance with Applicable Material Specifications

This Bulletin addressed a concern that fasteners may not have been manufactured from the material specified in the data supplied by the vendor. The Bulletin directed the licensee, in consultation with the resident inspector, to select a sample of threaded fasteners and nuts, and required that this sample be examined by an independent laboratory to determine if the devices were as specified.

The selection of the devices was reported in inspection report 50-397/87-30. This report will cover the results of the laboratory examination.

The inspector reviewed the laboratory results and concluded that the licensee had complied with the requirements of the Bulletin. The results showed that the materials in the threaded fasteners were of the specified type, although in several cases the grade of the material was not the same. Items selected from the safety-related group did meet all the required specifications; however, several non safety-related fasteners were within the use requirements but did not fully meet the purchase requirements. The use of these fasteners is being examined by the licensee's engineering staff. All results were forwarded to NRR for evaluation. This item is closed.

13. Cold weather Preparations

With the onset of cold weather, the inspector reviewed the licensee's efforts to protect plant systems and components from the effects of below-freezing temperatures. The inspector reviewed PPM 1.3.37, "Cold Weather Operations" to obtain the plant's procedural requirements. Plant personnel were made aware of specific system requirements through the issuance of "Scheduled Maintenance System" (SMS) cards that were issued on November 1.

The inspector toured the various portions of the plant with several different operators while they were checking the operation of the various heat trace circuits. All heat trace circuits were functioning correctly. The inspector also noted that the correct tags had been installed on a sampling of required valves within the power block. The tags were required by the procedure after the valves had been isolated.

No violations or deviations were identified.

14. Exit Meeting

The inspector met with licensee management representatives periodically during the report period to discuss inspection status, and an exit meeting was conducted with the indicated personnel on January 21, 1988.

The scope of the inspection and the inspector's findings, as noted in this report, were discussed and acknowledged by the licensee representatives.