ENCLOSURE 2

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Inspection Report: 50-397/95-31

License: NPF-21

Licensee: Washington Public Power Supply System
3000 George Washington Way
P.O. Box 968, MD 1023
Richland, Washington

Facility Name: Washington Nuclear Project-2

Inspection At: WNP-2 site near Richland, Washington

Inspection Conducted: October 15 through November 25, 1995

Inspectors: R. C. Barr, Senior Resident Inspector
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Approved: Pulsyer for H. J. Wong, Chief, Reactor Project Branch E — 12/26/95 Date

Inspection Summary

Areas Inspected: Routine, announced inspection by resident and Region-based inspectors of control room operations, licensee action on previous inspection findings, operational safety verification, surveillance program, maintenance program, and licensee event reports (LERs).

Results:

Operation

- The licensee's Gold Card Program effectively identified good and poor practices associated with operations activities; however, a number of deficiencies identified in the Gold Card Program that met the criteria for problem evaluation requests (PER) were not documented in the PER Program. This finding indicates the need for increased management oversight of the Gold Card Program (Section 3.2.1).

- Shift turnovers were generally effective. In some instances, operators did not implement management's expectations for alarm response in

announcement of alarms and reference to alarm response procedures (Section 3.2.3).

- A walkdown of several engineered safety features systems indicated generally good material conditions and the proper lineups (Section 3.3).

- A noncited minor violation was identified when an equipment operator failed to adhere to plant procedures in that he implemented a clearance by not individually hanging and signing clearance tags (Section 6.1).

Engineering

- Reactor feedwater flow testing was well planned and implemented (Section 4.1).

Maintenance

- Surveillance testing was generally performed and documented properly (Section 5).

- Personnel used a poor work practice of leaning a ladder against a residual heat removal (RHR) pump during vibration measurements (Section 5.1).

- Work management procedures did not provide adequate instructions for developing troubleshooting plans (Section 6.2).

Plant Support

- Response to resin intrusions into the reactor coolant improved; however, previous corrective actions to assure reliable condensate filter demineralizer (CFD) operation have not been fully effective and additional attention to oversight and work practices on the assembly of the internal components of the CFD appears warranted (Section 2.1).

- An equipment operator violated the requirements of a radiation work permit (RWP) when he breached a contaminated system outside a contaminated area (Section 6.1).

- Housekeeping conditions in the diesel generator (DG) rooms need additional management attention (Section 7.3). A noncited minor violation associated with tool box storage was identified.

Summary of Inspection Findings:

New Items

- Violation 397/9531-01 (Section 6.1) was opened.
- Two noncited violations were identified (Sections 6.1 and 7.3).

Closed Items

- Violation 397/9350-03 (Section 8.1) was closed.
- Violation 397/9414-02 (Section 8.1) was closed.
- Violation 397/9419-02 (Section 8.2) was closed.
- Violation 397/9419-03 (Section 8.3) was closed.
- Violation 397/9424-01 (Section 8.4) was closed.
- Violation 397/9427-01 (Section 8.5) was closed.
- Violation 397/9429-02 (Section 8.6) was closed.
- Violation 397/9433-01 (Section 8.7) was closed.
- Violation 397/9433-02 (Section 8.8) was closed.
- Inspection Followup Item 397/9402-05 (Section 9.1) was closed.
- LER 397/93-14, Revision 1 (Section 10.1) was closed.
- LER 397/94-05, Revision 1 (Section 10.2) was closed.
- LER 397/94-18, Revision 1 (Section 10.3) was closed.
- LER 397/95-03 (Section 10.4) was closed.

Attachments:

- Attachment 1 - Persons Contacted and Exit Meeting
- Attachment 2 - Acronyms

DETAILS

1 PLANT STATUS

The plant was at 97.5 percent reactor power at the beginning of the inspection period due to testing that indicated slightly elevated feedwater flows. On November 3, 1995, the licensee reduced reactor power to 75 percent to conduct maintenance on the control rod drive system. The reactor was returned to 97.5 percent power on Tuesday, November 7, 1995. On November 10, operators reduced reactor power to 80 percent to perform maintenance on CFD A. Reactor power was returned to 97.5 percent and remained at 97.5 percent for the rest of the inspection period.

2 ONSITE FOLLOWUP TO EVENTS (93702)

2.1 High Reactor Coolant Sulphate Concentration Due to Resin Intrusions

During this inspection period the facility experienced several minor resin intrusions in which reactor coolant sulphate levels exceeded 5 ppb and on October 31, 1995, a large resin intrusion with reactor coolant sulphate levels exceeding 40 ppb (no Technical Specification (TS) limit). The licensee determined that CFDs A, E, and F were the source of the resin intrusions. The licensee removed from service, inspected, and disassembled these CFDs. The licensee found a number of problems that had previously occurred. In two of the CFDs, the flow distribution tube was found disengaged from its retaining plate. The flow distribution tube inserts into this plate in a bayonet manner. A number of filter septa were found disengaged from their retaining adapters. These septa filters insert bayonet-like into the retaining adaptor which is threaded into the CFD distribution plate. Also, approximately 12 septa adapters were found to not be perpendicular to the distribution plate. The licensee initiated PERs 295-1136 and 295-1149 to document these findings. The licensee discussed improved methods for installing the flow distribution tube and the filter septa with the CFD vendor who suggested revised reassembly techniques. The licensee used these practices in reinstalling the CFD components. The licensee plans to modify procedures to incorporate these suggestions. The licensee determined that the nonperpendicular septa adapters were acceptable for use even though it requires the attached septa to be slightly bent to fit into the top retaining plate.

2.2 NRC Inspection and Conclusions

The inspectors observed selected portions of the disassembly and reassembly of CFD A. The inspectors noted that the licensee responded to high reactor coolant sulfates more conservatively than they had in the past. Reactor power was reduced to minimize resin introduction to the reactor coolant and CFD disassembly was more timely. The licensee missed an opportunity to identify these problems earlier due to the misinterpretation of resin trap high differential pressures. Previous corrective actions including specific

assembly methods and revised backwash and precoat techniques appear not to be effective.

The inspectors concluded that the licensee's response to resin intrusions into the reactor coolant system has improved; however, past corrective actions to assure the proper reassembly of the CFDs have not been effective. Oversight and work practices on the assembly of the internal components of the CFDs require strengthening.

3 PLANT OPERATIONS (71707, 92901)

3.1 Plant Tours

The inspectors toured the following plant areas:

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

3.2 Inspectors Observations

3.2.1 Gold Card Program

The licensee initiated the Gold Card Program in July 1995 to document good and poor practices associated with operations activities. This program was in addition to the PER Program that documents problems that have the potential or do impact plant safety.

On November 5, 1995, the inspectors noted that a Gold Card was written after the shift manager recognized that an equipment operator failed to follow procedures while working on control rod hydraulic accumulators. The inspector questioned why a Gold Card was initiated rather than a PER. The shift manager explained that the individual had made an error and that the Gold Card system was set up to catch errors in process, so it was not considered an error requiring a PER. The inspectors reviewed Plant Procedure Manual (PPM) 1.3.12, "Problem Evaluation Request," Revision 21, and verified that any deviation from the requirements in a safety-related plant procedure required a PER to be initiated. To determine if other instances of not initiating a PER had occurred, the inspectors reviewed the list of Gold Cards written between October 15-28, 1995, and identified a number of events that should have caused a PER to be initiated.

The licensee had recognized the potential for the Gold Card Program to be used instead of the PER Program. The licensee was in the process of performing a

quality assurance (QA) surveillance to assure proper implementation of this program during the time the inspectors was conducting this inspection. The inspectors discussed the findings of the inspection with the QA inspector involved in the surveillance. The findings of the licensee's surveillance and the NRC inspection were similar. The QA surveillance determined that approximately 12 of the events the inspectors had identified should have either resulted in a PER directly or in a PER because of a developing trend with a number of repeat events. The QA inspector initiated PER 295-1175 to address the concerns the surveillance identified.

The licensee's corrective actions included generating PERs for the Gold Cards that met the PER criteria of PPM 1.3.12, reevaluating the Gold Card Program instructions and training, and reevaluating the PPM 1.3.12 criteria requiring PERs.

The inspectors concluded that in some instances operations personnel had inappropriately initiated a Gold Card in lieu of a PER. These instances indicate a weakness in licensee management's oversight of the newly implemented Gold Card Program and a weakness in change management. The licensee assigned an individual to perform a daily review of the Gold Card findings, to evaluate the findings against the PER criteria and to initiate a PER when appropriate. The inspectors concluded that the licensee's actions to prevent recurrence of this problem appeared adequate.

3.2.2 DG Room Tour

On November 1, 1995, the inspectors toured the DG rooms. The general material condition of the equipment was good, but there were a number of oil leaks noted. The service water valves in DG Room 1 had a chemical buildup in the packing gland area and appeared to be in poor material condition. The inspectors discussed the concerns with the system engineer. The service water system engineer identified that the valves had been repaired, but had not been cleaned up.

3.2.3 Operating Logs, Records and Control Room Observations

The inspectors reviewed operating logs and records against TS and administrative control procedure requirements. The inspectors observed a number of shift turnovers for all the shifts. The inspectors observed that each off-going crew member reviewed the previous shift activities with the on-coming crew member. The reviews included discussion of logs, work orders, and night orders. While walking down the control room panels, the crew members examined pertinent tags, noted unusual or important indications, and discussed ongoing evolutions. The inspectors determined that the off-going to on-coming watchstander turnover activities appeared adequate. Following the individual watchstander turnovers and watch turnover, the control room supervisor (CRS) briefed the crew on planned activities and abnormal equipment lineups for the shift. Other watchstanders were then called upon to present pertinent information that they had learned through their individual turnovers.

The inspectors observed that during the crew briefings operators did not consistently acknowledge alarms according to management's expectations. Operators did not always announce the alarms and obtain acknowledgement of the alarm and refer to the alarm response procedure. Additionally, some crew briefings lasted for approximately 30 to 45 minutes. During this time, noncontrol room watchstanders were not at their watchstations and some personnel lost attention. The inspectors shared these observations with operations management who indicated they would consider the comments. While these observations did not represent safety concerns, they indicated the inconsistent implementation of management's expectation to have concise briefings.

3.2.4 Shift Manning

The inspectors observed control room and shift manning for conformance with 10 CFR 50.54(k), TS, and administrative procedures. The inspectors also observed the attentiveness of the operators in the execution of their duties. The inspectors concluded that shift manning was in conformance with the applicable requirements and operators were generally attentive to duties. The control room was observed to be free of distractions.

3.2.5 Equipment Lineups

The inspectors verified that valves and electrical breakers were in the position or condition required by TS and administrative procedures for the applicable plant mode. This verification included routine control board indication reviews and conduct of partial system lineups. Appropriate entry into TS limiting condition for operation (LCO) was verified by direct observation.

3.2.6 Equipment Tagging

The inspectors observed selected equipment, for which tagging requests had been initiated and verified that tags were in place and the equipment was in the condition specified.

3.2.7 General Plant Equipment Conditions

The inspectors observed plant equipment for indications of system leakage, improper lubrication, or other conditions that would prevent the system from fulfilling its functional requirements. Annunciators were observed to ascertain their status and operability. No anomalies were identified.

3.3 <u>Engineered Safety Features Walkdown</u>

The inspectors walked down selected engineered safety features (and systems important to safety) 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. Proper lubrication and cooling of major components were also observed for adequacy. The inspectors also verified that certain system valves were in the required position by both local and remote position indication, as applicable.

The inspectors walked down selected portions of the following systems:

DG, Division 2
Low Pressure Coolant Injection Trains A and B
High Pressure Core Spray
RHR Trains A and B
Standby Gas Treatment
Standby Liquid Control
125-Vdc Electrical Distribution, Divisions 1 and 2
250-Vdc Electrical Distribution

The inspectors noted that the engineered safety features systems were generally in good material condition and were aligned in accordance with applicable licensee procedures for the portions walked down.

4 ONSITE ENGINEERING (37551, 92903)

4.1 Reactor Feedwater (RFW) Flow Testing

Background - The licensee calculates reactor power by performing a heat balance calculation (calorimetric). One of the inputs to the calorimetric is RFW flow. In September 1995, the licensee conducted two rubidium feedwater flow tests that indicated RFW flow was 102.4 percent. The licensee reduced power by 2.5 percent while the test results were further evaluated. To confirm the results of these tests, the licensee performed four additional RFW flow tests in November 1995.

4.1.1 RFW Flow Test Results

On November 9 and 16, the licensee performed sodium RFW flow tests; on November 10 and 11, the licensee performed rubidium RFW flow tests. The preliminary results of this testing indicated that RFW flow is 101.5 percent instead of 102.4 percent as September 1995 testing indicated. The licensee attributed the differences between the September 1995 and November 1995 tests to leakage by the seat of test isolation valves. Additional isolation valves were added for the November tests. The licensee expects to have the final test data by mid-December. The licensee plans to remain at 97.5 percent power until the final test data is verified.

4.1.2 NRC Inspection and Conclusions

The inspectors attended the licensee's pretest briefing for the sodium test conducted on November 9, observed selected portions of the sodium tests conducted on November 9 and 16, reviewed the test procedures for the sodium and rubidium tests, and discussed the preliminary results of the tests with

the licensee. The inspectors considered the pretest briefing thorough. The pretest briefing included the appropriate precautions for handling highly radioactive sodium to minimize the radioactive dose received during the testing.

The inspectors performed a limited review of the licensee's test methodology and concluded the test appeared capable of accurately determining RFW flow. The inspectors will continue to review this issue when the final testing data is available.

5 SURVEILLANCE TESTING (61726)

The inspectors reviewed TS surveillance tests on a sampling basis to verify that:

- a technically adequate procedure existed for performance of the surveillance tests;
- the surveillance tests had been performed at the frequency specified in the TS and in accordance with the TS surveillance requirements; and
- test results satisfied acceptance criteria or were properly dispositioned.

5.1 RHR Pump Test

On November 7, 1995, the inspectors toured Pump Room RHR 2B while a pump operability test was in progress. The inspectors noted an extension ladder was leaning against the running pump.

The inspectors discussed with the CRS the practice of having a ladder leaning on the running pump. The supervisor explained that an electrician planned to use the ladder to take in-service testing vibration data. The inspectors questioned whether the electrician standing on the ladder during the test could affect the pump vibration data. The inspectors also discussed this concern with the electrical supervisor. The supervisor was not sure how the practice would affect the data. He directed that the practice be discontinued; however, pump data had already been taken with the ladder against the pump.

The inspectors reviewed the vibration data taken. The data was below the alert level limits. On November 9, 1995, the pump was run again to allow the data to be taken from a position that would not affect the readings. A comparison of the data indicated that leaning on the pump affected the readings, but the difference was very small. The inspectors concluded that the practice of taking vibration data from a ladder leaning on the equipment being monitored was a poor work practice. The corrective action to discontinue this practice appeared appropriate.

The inspectors witnessed portions of the following surveillance tests:

Procedure	Description
7.4.3.1.1.53	Reactor Steam Dome High Pressure
7.4.7.9.1	Turbine Bypass Valve Test
7.4.3.8.2.1	Turbine Governor Valve Test

Overall, surveillance testing was performed and documented properly.

6 MAINTENANCE OBSERVATIONS (62703)

During this period, the inspectors observed and reviewed documentation associated with maintenance and problem investigation activities to verify compliance with regulatory requirements and with administrative and maintenance procedures, required QA/quality control involvement, proper use of clearance tags, proper equipment alignment and use of jumpers, personnel qualifications, and proper retesting.

6.1 Scram Solenoid Pilot Valve (SSPV) Replacement

On November 3, 1995, the inspectors observed maintenance associated with the replacement of the SSPVs on the control rod drive hydraulic system hydraulic control units (HCUs). Generally, the evolution was carefully planned and effectively implemented. An assembly line technique was used to replace the SSPVs on the 65 HCUs during a period of 55 hours.

The inspectors attended the briefing that was held for maintenance personnel before starting the work. The briefing was not detailed, but the inspectors noted a briefing had been held for all participants earlier in the week. Licensee management stressed that the job would not be driven by the schedule. The electricians were knowledgeable of work that was to be performed and pointed out a number of concerns. The information covered was appropriate.

The inspectors observed portions of the tagout, valve replacement, and preparation for return to service of the first six HCUs. All work was done in accordance with procedure and good radiation control and maintenance practices were used. The work proceeded without production pressures. Personnel were knowledgeable of the tasks being performed.

On November 5, 1995, the inspectors observed an equipment operator remove the clearance from an HCU. The operator removed the tags in accordance with the procedure. However, when the accumulator drain Valve CRD-V-107/HCU started leaking after the operator replaced the fitting that was normally installed, the operator blotted the water with a towel and placed the towel on the floor. The water continued to drip onto the floor. The operator continued removing the tags, but remained cognizant of the leak. He stopped frequently to absorb the leaking water. The work was being performed in a noncontaminated area, but the water in the HCU was potentially contaminated. The inspectors noted that the operator did not survey the towel for contamination. The inspectors

discussed these observations with the work area supervisor. A health physics (HP) technician was contacted to clean up the water. No contamination was found.

The inspectors later reviewed the RWP for the job, RWP 95000224. The RWP required that breaches of contaminated systems outside of contaminated areas be performed using rubber gloves, HP coverage, and provisions to collect the leakage until surveyed and released from these controls by HP. The equipment operator who performed the task was not wearing gloves, did not have HP coverage, and the leakage was not contained. The operator failed to recognize the potential for contamination and to contact HP when the leak first occurred. This failure to adhere to the RWP had the potential to spread contamination. The failure to follow the RWP is a violation (Violation 397/9531-01). There have been previous problems implementing radiation protection procedures.

During the observation of the placement of the clearance on another HCU, the equipment operator who placed the clearance stated that he was not going to sign the clearance order for the valves until they were all tagged, then started the task. The inspectors noted this statement and observed the operator correctly position and tag the valves. The inspectors questioned why the operator decided to sign off the valves after they were all positioned and tagged rather than meeting management's expectation to sign off each tag as it was hung. The operator explained that the area was possibly contaminated and that he was wearing work gloves. He stated he did not want to have to take off the gloves to use his pen or to have the extra paper at the top of the ladder. The inspectors asked whether this was his normal practice. The operator explained that it was not and, in normal practice, valves being cleared were in different plant areas, which made individual signoffs more readily accomplished.

The inspectors and the licensee's second-verifier noted that the operator initialed the clearance order for the valves he had just finished tagging and that he initialed next to two fuses that he had not yet removed. The operator acknowledged the error and stated that he had been distracted. He then removed the fuses and another equipment operator verified their removal. The tags for the fuses were still in his possession and, therefore, the likelihood of not removing the fuses was slight. The equipment operator who had been observed by the inspectors reported his error to the shift manager and initiated a Gold Card to document the error.

The inspectors observed the placement of several clearances during the continuation of the work and noted the equipment operators were meeting management expectations. The inspectors reviewed PPM 1.3.8, "Danger Tag Clearance Order," Revision 25, and found that it required initials as each tag was placed and the item repositioned. The initialing after each tag is hung assures that no tag can be lost or misplaced to assure the clearance is completed. This failure constitutes a violation of minor significance and is being treated as a noncited violation, consistent with Section IV of the NRC Enforcement Policy.

Upon assessing this issue, the licensee pointed out that Step 8.2.5 of PPM 8.9.1, "HCU SSPV Replacement," stated "Hang tags 1 through 10: document on Attachment 10.1, Standard HCU Clearance Order, the procedure for performing the HCU work." The licensee indicated that the direction provided by PPM 8.9.1 likely confused the equipment operator since the direction appeared to contradict PPM 1.3.8. The inspectors noted that the administrative procedures establish the guidance and expectations for the remainder of the plant procedures. The inspectors noted that PPM 8.9.1 was not specific as to whether the clearance tags were to have been hung individually or as a group. As corrective action, the licensee discussed with the equipment operator on the expectations for clearance order implementation.

The inspectors concluded that the work performed was generally well planned and performed in accordance with the procedures and work instructions, with the exception of the two examples discussed above.

6.2 Transversing In-Core Probe (TIP) Indexer Maintenance

On November 1, 1995, the inspectors observed an instrument and control (I&C) technician and the system engineer investigate a problem with the TIP indexer on TIP-CRM-5B. The work performed was in accordance with PPM 1.3.7G, "Work Implementation," Revision 9, and Job Investigation Sheet (JIS) 95005795. The inspectors questioned why a JIS was used instead of using formal troubleshooting instructions as required by PPM 1.3.42, "Troubleshooting Plant Systems and Equipment," Revision 11, The system engineer and I&C supervisor explained that the JIS was used for tasks where detailed work controls, an RWP, or a clearance order were not needed or where the work would not affect other systems.

The inspectors reviewed the procedures used to control work management which included the PPM 1.3.7 series of procedures and PPM 1.3.42. The purpose for PPM 1.3.42 was to establish guidelines for the control of troubleshooting activities not covered by the work order process or not contained in other procedures. The inspector found that there was nothing in the PPM 1.3.7 series of procedures that would cause the troubleshooting Procedure PPM 1.3.42 to be used. The decision process described by the engineer and supervisor was not included in procedures. The inspectors discussed this concern with the I&C supervisor. The supervisor was aware of the problem due to a similar concern he had addressed in a PER on a separate subject. The inspectors concluded that the work management procedure did not provide adequate administrative instructions for the development of a work package to control troubleshooting activities. The licensee agreed with this observation and planned to revise appropriate procedures to control troubleshooting.

7 PLANT SUPPORT ACTIVITIES (71750)

The inspector evaluated plant support activities based on observation of work activities, review of records, and facility tours. The inspector noted the following during this evaluation.

7.1 Fire Protection

The inspector observed firefighting equipment and controls for conformance with administrative procedures. The inspector noted that a high number of fire impairments existed for which fire tours were being conducted because of concerns with Thermo-Lag and fire seals.

7.2 Radiation Protection Controls

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. The inspector also observed compliance with RWPs, proper wearing of protective equipment and personnel monitoring devices, and personnel frisking practices with the exception of the equipment operator working on the SSPVs discussed in Section 6.1. Radiation monitoring equipment was frequently monitored to verify operability and adherence to calibration frequency.

7.3 Plant Housekeeping

The inspector observed plant conditions and material and equipment storage 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. Housekeeping was observed to be good, except in the DG rooms.

The inspector identified a number of discrepancies on November 1, 1995. Two tool gang boxes were located within 4 feet of safety-related flexible conduits in both DG Rooms 1 and 2, even though signs on the boxes indicated that the boxes should not be within 4 feet of safety-related equipment. (The box was within 1 foot of the conduits in DG Room 1 and within 2 1/2 feet in DG Room 2 and both had their wheels locked). A vacuum, a coil of vacuum hose, and a mop were stored in DG Room 2. A speaker was stored in front of the fire extinguisher in DG Room 1. The top of an oil can permanently set up to collect vented oil fumes had not been replaced correctly and had spilled on the floor.

The inspector reviewed PPM 10.2.53, Revision 12, "Seismic Requirements for Scaffolding, Ladders, Man-Lifts, Tool Gang Boxes, Hoists, and Metal Storage Cabinets." This procedure requires that gang boxes that are permanently stored in safety-related areas be stored in the designated area delineated by striping or painting. If the box was not restrained (held down or tied back) in some manner, it was not to be placed nearer to safety-related equipment than the full height of the item plus 12 inches. The boxes in the DG rooms were not held down or tied back and did not have striping around them. The inspector considered the failure to store the tool boxes at the required distance from safety-related equipment as an example of a minor procedural adherence issue and an isolated incident. Because the potential for the tool boxes to move was limited since the wheels were blocked, there was minor

safety significance to this occurrence. This failure constitutes a violation of minor significance and is being treated as a noncited violation, consistent with Section IV of the NRC Enforcement Policy. The inspector discussed the corrective actions for the other concerns identified with the system engineer and found that the actions taken or planned appeared appropriate.

The licensing engineer initiated PER 295-1176 to address the improper storage of the tool boxes. As a corrective action, the licensee held shop training on the proper storage of all types of equipment which could damage safety-related equipment. The licensee walked the plant to verify that no other tool boxes were improperly stored. The licensee's corrective actions, while not particularly timely, appeared adequate.

7.4 Security

The inspector periodically observed security practices to ascertain that the licensee's implementation of the security plan was in accordance with site procedures, that the search equipment at the access control points was operational, that the vital area portals were kept locked and alarmed, that personnel allowed access to the protected area were badged and monitored, and that the monitoring equipment was functional. No problems were noted during these observations.

7.5 Emergency Planning

The inspector toured the Emergency Operations Facility, the Operations Support Center, and the Technical Support Center and ensured that these emergency facilities were in a state of readiness. Housekeeping was noted to be very good and all necessary equipment appeared to be functional.

7.6 Plant Chemistry

The inspector reviewed chemical analyses and trend results for conformance with TS and administrative control procedures. Plant chemistry was satisfactory during this inspection period. The plant experienced several resin intrusions and sulfate excursions as discussed in Section 2 of this report.

7.7 Conclusions

Plant support performance was generally good during this inspection period.

8 FOLLOWUP ON CORRECTIVE ACTIONS FOR VIOLATIONS (92702)

The inspector reviewed records, interviewed personnel, and inspected plant conditions relative to licensee actions in response to previous open items.

8.1 (Closed) Violations 397/9350-03 and 397/9414-02: Failure to Secure Compressed Gas Bottles in Accordance With Procedures

On December 22, 1994, and again on April 24, 1994, NRC inspectors found two compressed gas cylinders unattended and unrestrained near safety-related equipment. These were repetitions of previous incidents of unattended and unrestrained gas cylinders. The licensee's corrective actions for the April 24, 1994, instance included extending training in handling gas cylinders to operations, chemistry, and other personnel who routinely use compressed gas cylinders. The inspectors noted that training for the previous events was conducted only for maintenance personnel. The inspectors found that corrective actions for a previous violation were not fully effective because the licensee did not train personnel that could use gas bottles. The licensee's initial corrective actions were too narrowly focused to prevent recurrence. Subsequent corrective actions were more comprehensive and appears appropriate.

8.2 (Closed) Violation 397/9419-02: Shroud Head Bolts for Moisture Separator Not Properly Aligned for Removal of Moisture Separator Per Procedure

During refueling operations, licensee personnel did not effectively self- and second-verify that all 36 shroud head bolts were properly aligned for removal of the moisture separator. The error in verification resulted from the personnel not being able to effectively view the shroud head bolts. To correct this problem, the licensee revised PPM 10.3.6, "Reactor Vessel Steam Dryer and Moisture Separator Removal and Replacement," to require the use of underwater viewing equipment to verify unlatching of the shroud head bolts. The inspectors reviewed the revised procedures and found the changes reflected in the procedures. Subsequent refuelings have encountered no problems determining the position of these bolts.

8.3 (Closed) Violation 397/9419-03: Exceeding Lifting Force When Attempting Removal of Moisture Separator Contrary to Procedure

During an attempt to lift the moisture separator, the personnel violated PPM 10.4.12, "Crane and Hoist Program Control," Revision 3, which required that a lift attempt not exceed 110% of the expected weight of the load. The licensee revised PPM 10.3.6, "Reactor Vessel Steam Dryer and Moisture Separator Removal and Replacement," to incorporate the requirements of PPM 10.4.12 that established the load limit requirements. The inspectors reviewed the revised procedures and found the changes reflected in the procedures. The licensee conducted subsequent refueling and heavy load lifts without exceeding load limits.

8.4 (Closed) Violation 397/9424-01: Operators Failed to Enter the Emergency Operating Procedures (EOPs) After Noting That an EOP Entry Condition Existed

On July 27, 1994, operators noted that suppression pool water level was at +2.5 inches, but did not enter EOP PPM 5.2.1, "Primary Containment Control."

This action represented a failure to note the significance of a TS requirement and to make an immediate entry into the EOP. To prevent recurrence, the licensee implemented changes to their LCO entry sheets that require a review by the shift manager and CRS. The review provides a second check to assure entry into the TS LCO action requirements is made when required. The licensee has also implemented a training program that includes case studies of TS requirements. The inspectors reviewed the proposed training and found that it is adequate to address the issue and enhances the task-oriented systematic approach to training.

8.5 (Closed) Violation 397/9427-01: Failure to Ensure Containment Atmosphere Control System Instrumentation Tubing Clamps Were Installed in Accordance With As-Built Drawings

An NRC inspector identified missing instrument tubing support clamps for tubing attached to Transmitter CAC-FT-7B, a flow transmitter for the containment atmosphere control (CAC) system. There was a lack of conformance between the approved as-built drawing and the installed tubing. A quality control inspector, maintenance personnel, and the system engineer did not question the missing tubing clamps when compared with Train A of the CAC system, and failed to initiate a PER. The licensee corrected the installation and initiated changes to the PER program that addressed the inspector's concerns. The personnel involved were counseled as to the importance of initiating a PER when conditions warrant. The inspector considered the corrective actions adequate.

8.6 (Closed) Violation 397/9429-02: Failure to Store Hoist in Prescribed Location

This violation identified the failure to store Hoist MT-HOI-8 in the prescribed storage location. The licensee determined that the cause of the failure was a deficient procedure. PPM 10.4.10, "Jib Cranes and Electrically Operated Hoists Inspection, Maintenance, and Testing," did not reference or include the hoist safe storage requirements described in Drawing M-568 or in PPM 10.2.53, "Seismic Requirements for Scaffolding, Ladders, Man-lifts, Tool Gang Boxes, Hoists, and Metal Storage Cabinets." The immediate corrective actions included returning the hoist to its prescribed location and holding a "time-out" with mechanical and electrical craft personnel to provide training on the proper storage requirements for hoists.

The licensee identified another hoist that was stored outside of its storage location on December 21, 1994. The licensee determined this occurred prior to resolution of the violation. Contractors had identified the need to assign an alternative maintenance location for Hoist MT-HOI-6 during maintenance, but left the hoist unattended for 12 hours before an alternate storage location was assigned. As a result, a second "time-out" was held with contractor craft to ensure they understood the need to return hoists to prescribed storage locations or have an alternative storage location approved. To prevent recurrence, the licensee revised PPM 10.4.10 to require that Hoists MT-HOI-6

through -10 be returned to the storage locations identified in PPM 10.2.53 if they were to be left unattended.

The inspectors reviewed PPM 10.4.10 and 10.2.53 and verified that they were revised to reflect the need to store the crane in a prescribed or approved location. Through tours in the plant, the inspectors noted that the storage locations for the hoists were clearly marked and hoists were stored on the proper locations. The inspectors concluded that the implemented corrective actions were adequate.

8.7 (Closed) Violation 397/9433-01: Failure to Follow Procedure to Check Coupling and Verify Full-Out Rod Light Lit

This violation identified the failure of control room operators to verify the completion of coupling checks and that the rod full-out light was lit. The licensee found that the root cause was the failure of operations personnel to self-check, and independently verify, the completion of the coupling checks. As an immediate corrective action, the licensee performed the coupling checks to verify operability. As additional corrective actions, operations management coached the control room crews regarding their responsibilities associated with control rod manipulation and stressed the need for proper self-checking and independent verification. The CRSs were assigned an oversight responsibility for rod movements that occurred during their watch. An operations supervisory task was created to require the review of various operations documentation for accuracy and completeness. A program for monitoring personnel performance was implemented to provide feedback to operators regarding performance.

The inspectors made observations as rod movements were made and determined the new practice of using second verification for each step in the procedure should prevent future errors. In addition, the inspectors reviewed the OI-09 Program Form, "Moving Control Rods," which was used to review individual performance in performing this task. The form clearly defined management's expectations for the task. The CRS indicated that it was management's expectation that the OI-09 form be completed for the first rod movement in a shift. The inspectors reviewed the recent rod movements and verified that the documentation was completed to licensee management's expectation. The inspectors concluded that the current procedure and the implemented corrective actions were appropriate.

8.8 (Closed) Violation 397/9433-02: Failure to Comply With TS Action Statement When Allowed Outage Time Was Exceeded for a Containment Isolation Valve

An NRC inspector identified licensed operators' failure to comply with Post Accident Sampling TS 3.3.7.5. The operators failed to comply with the TS because they were not aware of the significance of the position indication of the control room valve indicator. As corrective actions, the licensee revised the TS bases to clarify TS 3.3.7.5 and instructed the control room operators regarding reviews of operability and communicating sufficient information when

determining TS LCO applicability. The inspector determined that the actions were adequate.

9 FOLLOWUP - ENGINEERING (92903)

9.1 (Closed) Inspection Followup Item 397/9402-05: Effects of Spray Pond Icing on Seismic Loads for Spray Pond Supports

The licensee initiated PER 293-0140, dated February 5, 1993, to review concerns of the NRC inspector who observed approximately 5 inches of ice in the service water spray ponds. The inspector's concern focused on the impact the ice would have on the supports for the piping in the ponds during postulated seismic events.

The licensee's analysis for PER 293-0140 indicated that the additional loads from the ice during postulated seismic events were all within the expected loads and design margins for the piping. The inspectors assessed the licensee's methodology and concluded that the assumptions were within accepted practice. The licensee's analysis included bounding the maximum possible thickness of ice, then calculating the loads both in the horizontal and the vertical planes for a 10-inch depth of ice. The inspectors concluded that the licensee had adequately addressed the inspectors' concerns.

10 LER REVIEWS (90712, 92700)

10.1 (Closed) LER 397/93-14, Revision 1: Inadequate Backup Overcurrent Protection for Containment Penetrations

This item documented the licensee's discovery of five primary containment electrical lighting circuits with inadequate overcurrent protection that were not turned off during plant operations. While completing corrective actions, the licensee discovered additional inadequate penetration overcurrent protection conditions. The licensee determined that the cause of this event was a design analysis that used inaccurate and incomplete documentation.

The licensee immediately opened the breakers in the five lighting circuits. Upon discovery of eight additional circuits, the licensee declared the penetrations and the equipment supported by the penetrations inoperable and entered the appropriate TS. The licensee modified the wiring in the circuits identified later with the exception of two valves to provide adequate primary and backup overcurrent protection. The two valves that were not modified, Valves RHR-V-123A and -123B, were removed from service, declared inoperable, and will remain inoperable. To prevent recurrence, the licensee revised PPM 1.3.4, "Operating Data and Logs," to require that the five lighting circuits be verified in the tripped condition at least once per day while the plant is in Modes 1, 2, or 3. The TS and FSAR were changed to reflect the actual condition of the circuits. The primary containment electrical penetration short circuit capability calculation was updated. The inspectors reviewed the corrective actions taken and determined that they were appropriate.

10.2 (Closed) LER 397/94-05, Revision 1: Failure of Control Rod to Scram Due to Degradation of Pilot Valve Elastomers Caused by In-Service Aging

This LER documented the failure of Control Rod 06-39 to scram during routine scram testing. The licensee determined that the root cause of the failure was an unusual combination of degradation of both the SSPV pressure and exhaust diaphragms. The licensee believed the cause of the degradation was accelerated aging due to differences in diaphragm composition. Upon discovering the failure, the control room operator manually inserted Control Rod 06-39 and hydraulically disarmed it. All the remaining control rods were scram time tested to verify that there was no common mode failure. As a result, the licensee identified four control rods with acceptable, but slower than expected scram times, declared the rods inoperable, and hydraulically disarmed them. The licensee commenced weekly scram time testing of all operable control rods and expedited replacement of SSPV diaphragms. All SSPVs were rebuilt prior to the completion of Refueling Outage R10. The licensee changed the environmental qualified service life for the diaphragm in the SSPVs from the manufacturer's suggested 3 to 4 years to 2 years, with the option to extend it to 3 years after further analysis.

The licensee plans to replace the SSPVs with valves with improved diaphragm material (Viton) that should last 10 or more years. The licensee replaced the SSPVs on 75 of the HCUs with valves that used the improved material. The licensee plans to replace the remaining prior to the completion of Refueling Outage R12. The schedule to replace the remaining valves will depend on analysis of the degradation of the diaphragm material recently removed during SSPV maintenance. The inspectors reviewed the corrective actions taken and observed installation of the new diaphragms. The inspectors determined the actions taken and completion of the planned replacement of the remaining SSPVs were adequate.

10.3 (Closed) LER 397/94-18, Revision 1: Failure to Comply with a TS Action Requirement When Inoperable Control Rod Block Instrumentation Exceeded the Allowed Outage Time

This item identified the failure to comply with the action statement for TS 3.3.6.b as a result of the failure of the Channel A scram discharge volume high water level control rod block level switch. The licensee determined the root cause was the failure to identify the nonadjustable design characteristic of the replacement scram discharge volume rod block level switch. The licensee declared the switch inoperable, placed it in the tripped condition as required by the TS action statement, and repaired the switch. To prevent recurrence, the licensee strengthened the substitution evaluation process, revised the replacement level switch substitution evaluations and information, obtained the proper operation and maintenance manual, and conducted maintenance shop briefings concerning the event.

The inspectors reviewed the LER and supporting information and determined that an additional causal factor involved the failure of I&C personnel to follow procedures after identifying differences between the switch removed and the

replacement switch. As discussed in NRC Inspection Report 50-397/94-32, I&C technicians modified and installed the switch without an approved modification package or procedure. This concern was addressed in the response to PER 294-0975, but was not brought out in the LER. The inspectors reviewed the corrective actions and concluded that both the root cause and the causal factor were adequately addressed in either the PER or LER.

10.4 (Closed) LER 397/95-03: Failure to Comply With TS Action Statement When Allowed Outage Time Was Exceeded for a Containment Isolation Valve

This LER is closed based on the review of Violation 397/9433-02 discussed in Section 8.8.

ATTACHMENT 1

1 PERSONS CONTACTED

Washington Public Power Supply System

J. Albers, Radiation Protection Manager
D. Atkinson, Reactor and Fuels Engineering Manager
*J. Baker, Training Director
*R. Barbee, System Engineering Manager
P. Bemis, Regulatory and Industry Affairs Director
*D. Bennett, Chemistry Supervisor
*J. Burn, Engineering Director
*L. Fernandez, Licensing Engineer
*G. Gelhaus, WNP-2 Projects Manager
*V. Harris, Maintenance Specialist
*M. Hedges, Corporate Chemist
P. Inserra, Quality Assurance Manager
*R. Koenigs, Project Manager
A. Langdon, Assistant Operations Manager
*T. Love, Chemistry Manager
*M. Mann, Operations Staff
*J. McDonald, Assistant Engineering Director
M. Monopoli, Maintenance Manager
*J. Muth, Quality Support Manager
*C. Noyes, Quality Control Manager
*W. Oxenford, Outage/Work Control Supervisor
*V. Parrish, Vice President Nuclear Operations
*J. Pedro, Compliance Specialist
*W. Rigby, Health Physics Supervisor
G. Sanford, Planning, Scheduling, Outage Manager
*C. Schwarz, Operations Manager
*W. Shaeffer, Operations Training Manager
*L. Sharp, Assistant Engineering Director
*G. Smith, Quality Assurance Director
*J. Swailes, Plant General Manager
*D. Swank, Licensing Manager
*P. Taylor, Shift Manager
*R. Winslow, Radiation Protection Support Supervisor
*J. Wyrick, Assistant to Plant General Manager

Southern California Edison

*S. Faranandi, Quality Assurance Supervisor

U.S. Nuclear Regulatory Commission

*H. Wong, Chief, Project Branch E
*R. Barr, Senior Resident Inspector
*J. Clifford, Senior Project Manager, NRR

The inspectors also interviewed various control room operators, shift supervisors, shift managers, and maintenance, engineering, quality assurance, and management personnel.

*Attended the exit meeting on December 5, 1995.

2 EXIT MEETING

An exit meeting was conducted on December 5, 1995. During this meeting, the inspectors reviewed the scope and findings of the report. The licensee acknowledged the inspectors' findings. The licensee did not identify that any proprietary information was provided to, or reviewed by, the inspectors.

ATTACHMENT 2

ACRONYMS

CAC	containment atmosphere control
CFD	condensate filter demineralizer
CRS	control room supervisor
DG	diesel generator
EOP	emergency operating procedure
FSAR	Final Safety Analysis Report
HCU	hydraulic control unit
HP	health physics
I&C	instrument and control
JIS	job investigation sheet
LCO	limiting condition for operation
LER	licensee event report
NRC	U.S. Nuclear Regulatory Commission
PER	problem evaluation request
ppb	parts per billion
PPM	plant procedure manual
QA	quality assurance
RFW	reactor feedwater
RHR	residual heat removal
RWP	radiation work permit
SSPV	scram solenoid pilot valve
TIP	transversing in-core probe
TS	Technical Specifications
WNP-2	Washington Nuclear Project-2