U. S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No:	50-397/92-14
Docket No:	50-397
License No:	NPF-21
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:	April 20 - May 31, 1992
Inspectors:	R. C. Sorensen, Senior Resident Inspector D. L. Proulx, Resident Inspector R. L. Nease, Acting Resident Inspector W. M. Dean, Acting Project Manager, NRR (Para. 5) C. C. Harbuck, NRR (Para. 5) T. R. Meadows, Senior Licensing Examiner (Para. 11)

Approved by: P. H. Johnson, Chief, Reactor Projects Section 1 — 6/30/92 Date Signed

Summary:

Inspection on April 20 - May 31, 1992 (Inspection Report No. 50-397/92-14)

Areas Inspected: Routine inspection by the resident inspectors of control room operations, licensee action on previous inspection findings, operational safety verification, surveillance program, maintenance program, refueling operations, licensee event reports, special inspection topics, and procedure adherence. During this inspection, Inspection Procedures 60710, 61726, 62703, 71707, 86700, 90712, 92700, 92701, 92702, and 93702 were used.

Safety Issues Management System (SIMS) Items: None.

Results:

General Conclusions and Specific Findings

Significant Safety Matters: None.

Summary of Violations and Deviations: One violation was identified, involving failure to maintain material accountability around the open refueling cavity (paragraph 9.b). Two non-cited violations were also identified, involving failure to follow a Technical Specifications action statement after unsatisfactory results were obtained from a refueling surveillance test (paragraph 9.a), and improper screening of design changes per 10 CFR 50.59 (paragraph 5).

Open Items Summary:

Eight open items and three LERs were closed; one new item was opened.

DETAILS

1. Persons Contacted

V. Parrish, Assistant Managing Director for Operations
J. Baker, Plant Manager
*L. Harrold, Assistant Plant Manager
*C. McGilton, Operational Assurance Manager
*G. Sorensen, Regulatory Programs Manager
*D. Pisarcik, Health Physics and Chemistry Manager
*J. Harmon, Maintenance Manager
*A. Hosler, Licensing Manager
*S. Davison, Quality Assurance Manager
J. Peters, Administrative Manager
*W. Shaeffer, Acting Operations Manager
*R. Webring, Plant Technical Manager
*C. Fies, Compliance Engineer

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

*Attended the Exit Meeting on June 4, 1992.

2. Plant Status

At the beginning of the inspection period, the plant was in cold shutdown for the R7 refueling outage. The reactor was defueled on May 8 to support chemical decontamination of the recirculation loops and repair of the recirculation system isolation valves. When chemical decontamination was complete and the reactor pressure vessel had been refilled, the licensee commenced reloading of the core on May 30. The plant was in Mode 5 (refueling) at the end of the inspection period.

3. Previously Identified NRC Inspection Items (92701, 92702)

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

a. (Closed) Violation (397/91-46-02): Failure to Establish Required 30 SCFM Blower Capacity for Main Steam Leakage Control (MSLC) System Test

The inspector had identified that the Technical Specifications (TS) requirements for establishing proper MSLC flow to determine operability had not been met. Specifically, the TS require establishing a flow rate of 30 SCFM, while the licensee was actually measuring 30 CFM (a flow rate less than that required by TS).

The licensee requested, and received, a TS amendment to allow a flow rate of 30 CFM, since a value of 30 SCFM was difficult, if not

impossible, to measure with the installed instrumentation. A review was also conducted to ensure that other TS requirements which cite SCFM were being properly applied.

This item is closed.

b. (Closed) Followup Item (397/91-46-04): Manual Scram Due to Condenser Tube Rupture

In December 1991, control room operators manually scrammed the reactor due to high conductivity in the reactor coolant system. The high conductivity was the result of a large linear crack in a condenser tube. This crack may have been induced or aggravated by operation of a third circulating water pump. Conductivity reached as high as 11.0 micromhos/cm in the reactor vessel.

As of the time of this event the licensee had eddy current tested approximately 25% of the tubes in the main condenser. This type of testing is done to locate tube defects. Defective tubes are then plugged. A small percentage of the tubes have been eddy current tested during each annual refueling outage. After this event, the licensee elected to eddy current test the remainder of the tubes during refueling outage R-7, in the spring of 1992. As of the end of this inspection period, the licensee had eddy current tested approximately 50% of the tubes which had not been previously tested, with a defect rate of about 0.8%. The inspector concluded that the condenser tube testing program being undertaken during R-7 was an aggressive one, but was warranted in light of the number of tube problems that had been experienced in the past at WNP-2.

This item is closed.

c. (Closed) Violation (397/91-44-01): Improper Assembly of Containment Atmospheric Control (CAC) Seismic Supports

During a detailed walkdown of the CAC skids the inspector had identified numerous pipe supports that were not configured in accordance with vendor design drawings. This was a violation of 10 CFR 50, Appendix B, requirements.

The licensee subsequently conducted a 100% walkdown of the seismic supports on both CAC skids. Numerous additional deficiencies were identified. All deficiencies were immediately corrected by the licensee to bring the supports into conformance with the vendor design drawings.

The licensee also clarified the process and direction used for accomplishing CAC system walkdowns since these walkdowns are specifically required by Technical Specifications.

This item is closed.

d. (Closed) Followup Item (397/91-44-02): No Torquing Criteria For Pipe Support Fasteners

During a walkdown of the CAC skids, a number of the seismic support fasteners were found to be loose or missing. The inspector had noted that the applicable vendor drawing provided no torquing specification for the pipe support fasteners. The inspector had requested that the licensee provide information concerning how torquing of these fasteners was actually accomplished.

In response to the violation in paragraph c. above, the licensee reviewed their general mechanical maintenance procedures to evaluate how fasteners and pipe supports were addressed. PPM 10.2.29, "Installation, Modification, and Inspection of Pipe Supports," and PPM 10.2.10, "Fastener Torque and Tensioning," were reviewed. The licensee had revised these procedures to provide improved guidance on installation of fasteners and pipe supports. Specifically, PPM 10.2.29 now contains enhanced instructions for installation of CAC system U-bolts as well as several pages of additional instructions for configuration of pipe supports in general. PPM 10.2.10 now contains enhanced guidance for fastener torque and tensioning. The inspector reviewed the revisions to the above procedures and found them to be appropriate.

This item is closed.

e. (Closed) Violation (397/91-44-04): Containment Atmospheric Control (CAC) "A" Train Blower Seized Due To Loss Of Lubricating Oil
(Closed) Violation (397/91-44-05): Both CAC Blowers Inoperable Due To The Existence Of The Wrong Recycle Flow Controllers

These two apparent violations were cited as a single Severity Level III violation which was assessed a civil penalty of $25,000. The licensee identified both problems. Corrective actions that were implemented for the loss of lubricating oil event included the following:

* Oil drain plugs for both trains were verified tight after the problem was discovered.

* The oil drain plugs for both trains were lockwired in place.

* A Maintenance and Operations Bulletin was issued to reinforce the importance of assuring proper drain plug installation.

With regard to the wrong recycle flow controllers being installed, the problem had existed since plant construction. The licensee had identified the problem prior to plant startup, but it had never been corrected. The installed recycle flow controllers would not have functioned in the automatic mode, and would have caused the recycle valves to open fully, resulting in too much recycle flow.

As corrective action, the licensee opted to provide guidance to control room operators regarding operation of the recycle flow

controllers in the manual mode. This was intended to be a temporary measure until the incorrect controllers were replaced.

As further corrective action, the licensee initiated a Safety System Functional Inspection of the CAC system in an effort to uncover further problems. Several significant problems were identified, as documented in LERs 91-25-01 and 91-29-01. Further, the licensee conducted a functional test of the CAC system. This test was much more extensive than had previously been conducted, and identified significant flooding problems that could have rendered the CAC system inoperable. This issue was addressed separately in LER 92-07.

These items are closed.

f. (Closed) Followup Item (397/92-08-05): Squib Valve Test Firing Data Indeterminate.

During a review of records associated with the standby liquid control (SLC) system, the inspector was unable to determine whether or not the charges for the Squib valve were replaced with charges from a batch that had a successful test firing. This certification was required to be attached to the applicable surveillance procedure (PPM 7.4.1.5). The inspector also noted that PPM 10.10.2 (the procedure invoked for replacement of the Squib charges) had no procedural direction for the appropriate action (prescribed in ASME Section XI) to take in the event a charge fails to fire.

The licensee produced the vendor's certification of the test firings for the installed Squib valves, and placed a copy of this certification with the surveillance procedures as described above. In addition, the licensee stated that the system engineer would periodically review plant records with respect to this issue to ensure that appropriate documentation is attached.

The licensee also stated that no additional procedure guidance was necessary in the event that a Squib charge fails to fire, because if this occurred, a Problem Evaluation Request (PER) would be generated, and the Management Review Committee (MRC) would direct the proper action to be taken, utilizing appropriate reference material.

This item is closed.

g. (Closed) Followup Item (397/91-23-02): Determine How Licensee Ensures All Design Changes, as Reflected in the FSAR, are Included in Annual Report.

The inspector noted that the licensee had relocated their seismic monitors from the location described in the FSAR and did not perform a safety evaluation or include this change in the annual report. This issue was referred to NRR for review, and is discussed further in paragraph 5.

This item is closed.

4. Flooding of the High Pressure Core Spray (HPCS) Pump Room (92703)

On May 28, the licensee was preparing for a hydrostatic test of portions of the HPCS system. This test required the removal of relief valve HPCS-RV-35. However, the piping connection on the discharge side of this valve, which communicated directly with the wetwell via the minimum flow line, was not blanked off. The licensee felt that the location of the HPCS minimum flow discharge line inside primary containment was such that it was highly unlikely that water could be introduced into the HPCS system from the suppression pool through this line. While the hydrostatic test was in progress, operators were filling the suppression pool to support reflood of the reactor pressure vessel cavity. When the water level in the suppression pool reached the HPCS minimum flow line, water spilled out of the HPCS-RV-35 connection. The room had been flooded with about 8 inches of water when the problem was discovered by the work control field manager during a routine tour. Operators were able to lower level to stop the flow in about two hours. Most of the floor area in the HPCS pump room was found to be contaminated. No personnel were contaminated, nor was the HPCS pump motor, which was opened for inspection, damaged.

The licensee initiated an Incident Review Board (IRB), to investigate the causes of this occurrence. The IRB found that the original planning for the fill of the RPV had designated the use of condensate storage tank (CST) water through the HPCS system. However, this plan was changed to reflood the RPV via the low pressure core spray (LPCS) system using suppression pool water. Management did not consider the flow path through the HPCS-RV-35 connection to be a concern. The procedure for the HPCS hydrostatic test therefore was not revised to require installation of a blank flange because it only considered the portion of HPCS system that was to be tested.

Corrective actions for this event included briefing of all operators, maintenance engineers, and technical personnel on the potential for (and how to prevent) this type of occurrence, assigning Work Control to maintain the status of all open systems, and making an entry in the night order book for operators to routinely perform periodic walkdowns of areas with the potential for flooding during any future filling evolutions. These corrective actions appeared to be satisfactory to prevent recurrence of this event. However, the inspector expressed concern to licensee management that several other fluid spills had occurred during this outage that may indicate a negative trend in this respect. These events included:

- Approximately 1500 gallons of glycol were spilled from a drain line into a radwaste building sump on May 12.

- On May 29, the HPCS room was partially contaminated by water from a valve bonnet being removed without laying plastic underneath.

- Contaminated water leaked onto the ground from turbine rotor transport boxes stored outside the protected area.

- A control rod drive drain overflowed during venting operations on May 29, contaminating a small area on the 522' elevation of the Reactor Building.

- Water from a LPCS room cooler drain line spilled into the LPCS pump room.

- On May 18, approximately 100 gallons of water were inadvertently drained from the SLC storage tank to the floor drain.

The events of May 12 and May 18 were due in large part to changes that had been made in the clearance order system. When the clearance orders were released, the systems had not been restored to their normal lineup in the prescribed manner. The clearance order process was again modified in an attempt to alleviate this problem.

The other events described above also resulted in the licensee initiating corrective actions. The licensee stated that they would continue to emphasize caution to the staff during evolutions which have a potential for fluid spills.

No violations or deviations were identified.

5. 10 CFR 50.59 Program Inspection (92701)

The licensee's 10 CFR 50.59 program was reviewed on May 19 - 21, 1992. The inspectors reviewed the licensee's training and qualification program, pertinent implementing procedures, and selected procedure and plant modifications to determine if the licensee's 10 CFR 50.59 safety evaluation program was in conformance with NRC requirements. Though the program appeared to be effective in identifying those changes that have safety significance, a deficiency was noted in that the licensee's criteria for determining when a proposed activity required a safety evaluation pursuant to 10 CFR 50.59 did not appear to be consistent with the rule.

PPM 1.3.43, "10 CFR 50.59 Review and Safety Evaluation Process," dated February 6, 1991, describes the licensee's process for performing 50.59 reviews and safety evaluations. The criteria permit changes to be made to the facility or procedures as described in the safety analysis report without first performing a safety evaluation. This appeared to be a result of the wording of question 2 on the form which is completed by the reviewer to determine if a 50.59 review is necessary. This question asked: "Does the implementing activity constitute a change to WNP-2 which could functionally affect a safety-related structure, system or component (SSC) as described in the licensing basis document (LBD)?" This conflicts with the criteria of the rule which requires a 50.59 review for any changes that "...constitute changes in the facility as described in the safety analysis report or to the extent that they constitute changes in procedures as described in the safety analysis report." The licensee's screening criteria appeared to effectively force the reviewer to presuppose the results of an unreviewed safety question evaluation without using the applicable guidance to determine if such a condition exists.

The inspectors noted that the following basic design changes (BDCs) made changes to the facility, as described in the safety analysis report, and were implemented without having first conducted a safety evaluation. They also were not included in the applicable annual report:

a. BDC 91-0157-0A, "Relocation of Seismic Monitors SEIS-TPA-2 and SEIS-RSR-1/1." The location of these monitors, as described in FSAR Section 3.7.4.2, was changed. This was previously identified by the NRC as Open Item 397/91-23-02, and is discussed in paragraph 3.

b. BDC-84-1050A, "Standby Service Water (SW) and Spray Pond Biological Control System." This design addition was part of the Supply System's response to Generic Letter (GL) 89-13, "Service Water Systems Problems Affecting Safety-Related Equipment." The SW system is described in Section 9.2.7 of the FSAR.

c. BDC-91-0201-0A, "Control Switches for Drywell Cooling Fans Changed from Auto to Momentary Contact Switches." These fans are described in many FSAR sections (e.g., 1.2.2.12.10, 6.2.5.2.1, 9.4.2.2.1, etc.). Auto-start capability was removed and manual operator actions were thereafter required to start the fans and assure adequate hydrogen mixing post-accident.

d. BDC 88-0441-0A, "HPCS Solenoid and Air Pressure Control Valve Replacement." The HPCS Air Start System is discussed in FSAR Section 9.5.6.

e. BDC 90-0057-0A, "Modifications to the HPCS and TMU (tower make-up) Battery Enclosures." This modification impacted some of the fire loading tables in FSAR Section F.2.

f. BDC 91-0287-0A, "RHR Valves Appendix R Wiring Modifications." This change modified existing Appendix R residual heat removal (RHR) motor operated valve circuitry, and relocated limit and torque switches that were referenced in FSAR Section F.4, Table 4.1.

The inspector noted that the licensee required the reviewer to provide a written justification to support a determination of why a safety evaluation was not required. This justification many times provided most of the information expected to be included in a safety evaluation. None of these changes appeared to result in an unreviewed safety question.

The licensee provided the inspectors with a draft procedure that was intended to replace the current version of PPM 1.3.43. The 50.59 review criteria had been modified in this procedure to better reflect the criteria contained in the regulation. The licensee committed to fully implement this procedure after completion of the R7 refueling outage.

The licensee had also upgraded their qualification requirements of the training program such that personnel that conduct and independently review safety evaluations must complete a two-week course on 50.59 reviews. These actions appeared to have the potential to improve the licensee staff's understanding and application of safety evaluations.

The licensee also demonstrated their computer-based system that allows those who prepare safety evaluations to access the licensing basis documents (LBD). The system, when properly used, appeared to be an excellent tool for conducting a search of the LBD to determine all locations where a particular system, component, or procedure may be referenced. The licensee had also implemented an administrative process enabling those that prepare safety evaluations to review changes to the LBD not yet reflected in the data base.

The inspectors reviewed a number of safety evaluations that the licensee had performed for changes to systems and procedures contained in the safety analysis report. Generally, the justifications for determining that there were no unreviewed safety questions had improved over the previous year, as the effects of the recently implemented training program have taken effect. There were no changes identified in which an unreviewed safety question existed.

Because of the minimal safety significance of the items listed above, for which a safety evaluation and inclusion in the annual report were required, and because the licensee appeared to have implemented acceptable corrective actions, this issue meets the criteria for a non-cited violation, pursuant to 10 CFR 2, Appendix C, Section V.G. (NCV 397/92-14-01, Closed).

6. Operational Safety Verification (71707)

a. Plant Tours

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

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

b. The following items were observed during the tours:

(1) Operating Logs and Records. Records were reviewed against Technical Specifications 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. The attentiveness of the operators was observed in the execution of their duties and the

control room was observed to be free of distractions such as non-work related radios and reading materials.

(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. Technical Specification limiting conditions for operation were verified by direct observation.

(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. Annunciators were observed to ascertain their status and operability.

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

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

(9) Radiation Protection Controls. The inspectors 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 inspectors also observed compliance with Radiation Work Permits, proper wearing of protective equipment and personnel monitoring devices, and personnel frisking practices. Radiation monitoring equipment was frequently monitored to verify operability and adherence to calibration frequency.

During a tour of the reactor building on May 15, 1992, the inspector noted that the spoolpiece between the RHR and fuel pool cooling (FPC) systems appeared to be leaking at each of the flanged connections. A small puddle of a brown substance was on the floor of the 548 foot elevation below each of these flanged connections. The inspector notified HP and the technician took smears of these small puddles, which showed activity of approximately 2000 dpm/100 cm^2. The area was subsequently posted as a contaminated area. The licensee stated that they would ensure that infrequent connections such as these are frequently checked in the future for potential leaks.

(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.

(11) Security. The inspectors 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, and that personnel allowed access to the protected area were badged and monitored and the monitoring equipment was functional.

c. Engineered Safety Features Walkdown

Selected engineered safety features (and systems important to safety) were walked down by the inspectors 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, using local and remote position indications as applicable, that certain system valves were in the required position.

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

System	Dates
Emergency Diesel Generator (EDG) Systems, Divisions 1, 2, and 3.	May 29
Low Pressure Core Spray (LPCS) System	May 15
High Pressure Core Spray (HPCS) System	May 28, 30
Residual Heat Removal (RHR) System, Trains "A" and "B"	May 26, 28
Scram Discharge Volume System	April 30
Standby Liquid Control (SLC) System	May 15
Standby Service Water System	May 4
125V DC Electrical Distribution, Divisions 1 and 2	April 30, May 28
250V DC Electrical Distribution	April 30, May 28

No violations or deviations were identified.

7. Surveillance Testing (61726)

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

b. Portions of the following surveillance tests were observed by the inspectors on the dates shown:

Procedure	Description	Dates Performed
7.4.6.1.24	Local Leak Rate Test of PSR-V-X84	April 23
7.4.3.7.5.43	Calibrate Backup Transformer Meters	May 1
7.4.3.1.1.63	Average Power Range Monitor (APRM) B Channel Functional Test	May 26
7.4.5.1.8	RHR A Loop Operability Checks	May 26

No violations or deviations were identified.

8. Plant Maintenance (62703)

During the inspection period, the inspector 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/QC involvement, proper use of clearance tags, proper equipment alignment and use of jumpers, personnel qualifications, and proper retesting. The inspector verified that reportability for these activities was correct.

The inspector witnessed portions of the following maintenance activities:

Description	Dates Performed
AR-8268, Install Temporary Jumper Cables for Fuel Pool Cooling Pumps	April 24
AR-5692, Replace 250 Volt Battery Cells	April 30
AR-8396, Open, Clean, Inspect RHR-A Heat Exchanger	May 12, 13
PPM 10.2.89, Chemical Decontamination of the Recirculation Loops	May 11-13

AR-5675, Open, Clean, Inspect, Division I EDG Heat Exchanger	May 19
AR-8525, Adjust Slip Ring Safety Gap on Division I EDG	May 19
AR-6353, Replace Ethylene Propylene Components for Vacuum Breaker CVB-V-1GH	May 20
AR-6352, Replace Ethylene Propylene Components for Vacuum Breaker CVB-V-1EF	May 20

The inspectors also witnessed portions of the chemical decontamination of the recirculation loops on the dates listed above. This evolution was carried out by personnel who appeared to be trained and knowledgeable, who performed their duties in a deliberate and conservative manner with no problems in any phase of the operation. The licensee was successful at decontaminating the recirculation loops to an average decontamination factor of about four (based on decreased radiation levels in the areas surrounding the piping), with certain localized areas decontaminated by a factor of 10. This should help to decrease person-rem exposure at WNP-2.

In witnessing AR-6353 and AR-6352, the inspector observed inconsistencies concerning signing in/out on radiation work permits (RWPs), implementing confined space procedures, and handling sign-offs on maintenance work requests (MWRs).

Plant Procedures Manual, PPM 1.9.2, "Confined Space Entry", states that the spotter (required for work in confined spaces) "will maintain communications at all times and visual contact where possible." In interviewing the designated spotters for each of the crews working in the wetwell for MWRs AR-6353 and AR-6352, one of the spotters interpreted the procedure to mean that he should call the crew via telephone every 15 minutes, while another spotter interpreted the procedure to mean the crew would call him every 5 minutes.

The inspector also observed inconsistencies in obtaining sign-offs for steps in the maintenance work requests (MWRs). None of the crews had the original copies of the MWRs in the wetwell with them, but had working copies to use. One of the crews had the original copy outside the wetwell with the spotter, and signed off the completed steps when they went on break. Another of the crews signed off completed steps at the end of the eight-hour shift. The inspector was told that it was left to the discretion of the craft supervisor or foreman if the steps performed could be remembered at the end of the shift. This appeared to be consistent with PPM 1.3.7, "Maintenance Work Request," which did not state how long after the steps are completed the sign-offs should occur.

There were also inconsistencies in workers signing in and out of the RWP that controlled radiological work in the wetwell, RWP 292-00229. The inspector noted that several workers had signed in on RWP-292-00229, but could not be found in the designated RWP area (wetwell). The inspector also observed that there were several who had signed in on RWP 292-00229

for an entire 8 hour shift, without signing out for breaks. According to the health physics technician at the checkpoint and the Health Physics Manager, it was expected that personnel will sign out on their RWP each time they leave the area.

These observations were discussed with plant management, who indicated that they would ensure that their expectations in these areas were communicated to the plant staff.

No violations or deviations were identified.

9. Refueling Operations (61710)

The inspectors witnessed portions of defueling/refueling operations during the R7 refueling outage. This inspection included verifying plant conditions, surveillances, the presence of a Senior Reactor Operator, and that plant procedures were followed. The inspectors determined that core alterations appeared to be generally executed in a deliberate manner with little or no problem. However, the following deficiencies were noted:

a. On May 7, the inspector reviewed completed surveillance test PPM 7.4.9.6 (Revision 7), "Refuel Platform Crane and Hoist Interlock Surveillance," that had been performed earlier that day. Section 6.0, step 2.f required the operator to demonstrate operation of the overload cutoff on the main hoist. The operator had recorded 1135 pounds as the trip point. However, Technical Specification (TS) 4.9.6.a requires the licensee to verify the main refueling hoist operable by "demonstrating operation of the overload cutoff on the main hoist when the load exceeds 1200 +/- 50 pounds." The operator considered this to be a satisfactory surveillance. This was based on his contention that the Supply System had interpreted this TS requirement to mean that as long as the overload cutoff actuated at less than 1250 pounds, the hoist should be considered operable. Thus, the operator continued with core alterations. The inspector subsequently found that no TS interpretation had been issued for main hoist surveillances. It appears that TS 4.9.6.a prescribes a band of 1150 to 1250 pounds for a satisfactory surveillance. The action statement for TS 3.9.6 states, in part, "With the requirements for refueling platform OPERABILITY not satisfied, suspend the use of any inoperable refueling platform equipment...." Therefore, the failure to suspend core alterations after an unsatisfactory surveillance test is an apparent violation of TS 4.9.6.a.

The basis for this TS stated that the purpose of this surveillance was to ensure the hoist cutoff actuates prior to damaging a fuel assembly, should a fuel assembly become stuck in the core. The fact that the hoist cutoff actuated at 1135 pounds is of little safety significance. The licensee issued a procedure deviation to prescribe clear acceptance criteria that conformed to the TS. They also recalibrated the hoist cutoff to actuate within the TS required tolerance. Because of the minimal safety significance, and corrective action that the licensee implemented, this apparent violation appeared to meet the criteria for a non-cited violation, pursuant to 10 CFR 2, Appendix C, Section V.G. (NCV 397/92-14-02, Closed).

b. PPM 1.3.18, "Tools and Equipment Accountability Control Around Open Plant Systems," section 5.1.2.a stated in part, "Monitor foreign materials passing the barricaded area boundary ... and ensure each item is logged." Section 5.1.5 describes actions to be taken to capture these items to keep them out of the reactor pressure vessel (RPV) cavity. The inspector noted several items on the refueling bridge that were not secured or otherwise captured per the procedure, as well as other small items that were not logged in the accountability log at all. These were discussed with the SRO on the refueling bridge, who corrected these deficiencies. This was noteworthy, because on May 30 the licensee discovered a roll of tape underwater in the cavity on the reactor vessel flange, and a rag floating on the surface of the water in the reactor cavity. The failure to control material accountability around the RPV cavity as prescribed in PPM 1.3.18 is an apparent violation of Section 6.8.1 of the Technical Specifications (Violation 397/92-14-03).

Two violations were identified, as discussed above.

10. Licensee Event Report (LER) Followup (90712, 92700)

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
92-12	Access Plugs Over Both RHR Pump Rooms Not Installed When The Systems Were Considered Operable
92-15	Containment Instrument Air (CIA) Engineered Safety Feature Actuation (ESF)

(Closed) 89-43, Revision 1 - Inoperability of the HPCS System Caused by Equipment Failure

During a system operability test in November 1989, the HPCS minimum flow valve, HPCS-V-12, failed to open to maintain proper system flow. It was first thought by the licensee that the flow indicating switch that provided system flow input to the HPCS-V-12 control circuitry was faulty. It was later discovered that the suppression pool test return valve, HPCS-V-23, had not fully closed. This had allowed enough system flow such the flow setpoint for opening of the minimum flow valve had not been reached. The licensee then thought that there may be a mechanical binding problem in HPCS-V-23. The valve was taken apart and closely examined during refueling outage R-5. No problems were identified.

The same event occurred again in October 1990. This time MOVATS testing of the valve operator determined that premature torque switch actuation was taking place in HPCS-V-23, due to the large

differential pressure across the valve. The torque switch was reset to a higher value, which allowed HPCS-V-23 to close under the maximum differential pressure the valve would experience.

No violations or deviations were identified.

11. Closure of Short and Intermediate Term Corrective Actions Regarding the Licensed Operator Requalification Training Program

An inspection was conducted on February 24-27, 1992, regarding the closure status of the licensee's short and intermediate term corrective action commitments associated with their unsatisfactory licensed operator requalification training program. Inspection Report 50-397/92-04 documented the inspection findings.

That inspection concluded that all of the short term corrective action plan (CAP) items were closed. However, the inspectors determined that two intermediate term CAP items remained open. The licensee committed to closure of these items by the end of April 1992.

After further review of the additional information documenting the closure of these two items in May 1992, and considering the satisfactory results of the operational evaluations conducted by the NRC in February 1992, the staff determined that all short and intermediate term actions listed in the licensee's plan have been completed.

12. Exit Meeting

The inspectors met with licensee management representatives periodically during the report period to discuss inspection status and an exit meeting was conducted with the indicated personnel (refer to paragraph 1) on June 4, 1992. The scope of the inspection and the inspectors' findings, as noted in this report, were discussed and acknowledged by the licensee representatives.

The licensee did not identify as proprietary any of the information reviewed by or discussed with the inspectors during the inspection.