U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION V

Report No. 50-397/84-18

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

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

Docket No. 50-397

License No. NPF-21

Inspection at WNP-2 Site near Richland, Washington

Inspectors: R T Dodds for — 7/27/84
A. D. Toth, Senior Resident Inspector — Date Signed

R T Dodds for — 7/27/84
R. S. Waite, Resident Inspector — Date Signed

Approved by: R T Dodds — 7/27/84
R. T. Dodds, Chief — Date Signed
Reactor Projects Section 1

Summary:

Inspection on June 6 - July 6, 1984

Areas Inspected:

Routine, unannounced inspection by the resident inspectors of control room operations, engineered safety feature status, surveillance program, maintenance program, power ascension test program, licensee event reports, special inspection topics, and licensee action on previous inspection findings.

The inspection involved 128 inspector-hours onsite by two resident inspectors, including 19 hours during backshift work activities.

Results:

Two items of noncompliance were identified in the areas of surveillance (control of electrical jumpers, Paragraph 6.b) and maintenance (timeliness of corrective actions, Paragraph 7.e.).

DETAILS

1. Persons Contacted

Washington Public Power Supply System

G. Afflerbach, Assistant Plant Manager
R. Corcoran, Operations Manager
K. Cowen, Technical Manager
J. Landon, Maintenance Manager
J. Martin, Plant Manager
J. Peters, Administrative Manager
P. Powell, Licensing Manager
C. Powers, Reactor Engineering Supervisor
J. Shannon, Director of Power Generation
D. Walker, Plant Quality Assurance Manager

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

2. General

The Senior resident inspector and/or the resident inspector were onsite June 6-9, 11-15, 18-22, 25-29, July 2-3 and 5-6. Backshift inspections were conducted June 6, 7, 8, 9, 18, 19, 27 and 29.

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

A special team inspection was conducted May 30 - June 8, 1984, to assess control room operations staff performance on all three work shifts. Team members included the resident inspector (R. Waite), Region V inspectors (D. Willett and A. Johnson), a Region IV resident inspector (D. Carpenter), and an EGG reactor operator examiner consultant (D. Hill).

A regional office safeguards auditor (A. Wieder) was onsite June 6-7 to review special materials controls.

Security inspector (C. Schwan) was onsite June 13-15 and 18 to review safeguard security measures.

A regional office operations inspector (D. Willett) was onsite June 25-29 to work with the resident inspector for followup and continuation of the May-June special inspection of control room operations.

A Regional office inspection supervisor (R. Dodds) was onsite June 26-29 to participate in and review inspection of control room operations.

A regional office inspection supervisor (G. Yuhas) and radiological control inspector (C. Sherman) were onsite June 6-7 for facility orientation training and preparations for future inspections. Mr. Sherman was also onsite June 26-29 to inspect open items relating to radiological matters.

3. Plant Status

The plant has operated at about 45% thermal power, and has been tied to the electrical generating grid successfully with up to 350 Mwe (plus 30 Mwe in-plant loads). Core performance thermal limits calculations have been made using the offsite computer BUCLE calculations. A generator trip test (with power levels within steam bypass valve capability) was successfully conducted June 19, although one bypass valve stuck open after the test.

4. Operations Verifications

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

a. Sampling Program

The inspector reviewed the licensee's program for tracking cumulative time limits which begin to accrue whenever the chemistry limits exceed those allowed by Technical Specification LCO 3.4.4, "Chemistry". The program in use was started by the licensee concurrent with the first time Technical Specification Action Statement 3.4.4.a was entered. The operations staff was informed of this program per the Night Orders on June 8. Reactor coolant samples are normally taken each work shift by the licensee. If chemistry values exceed the limits allowed by the LCO the sampling frequency is increased to an hourly interval in order to allow tracking the LCO condition more closely. These values are recorded in an "LCO Log" which is used to track the cumulative time above the

limit. The implementation of this program will be reviewed during future routine inspection activities.

No items of noncompliance were identified.

b. Stuck Bypass Valve

During generator trip testing the turbine bypass valve #3 stuck in the open position. The cause of the condition was not known. The shift manager considered that the function of the valve was to open on demand, and that since it was already open it was in a conservative condition to meet its function and was therefore OPERABLE, relative to technical specification requirements. However, the shift manager could not assure the inspector that the cause of the open condition was not in the electronic control circuits, such that a signal to open the valve would instead close it. Since operability of the bypass valves is required by technical specification 3.7.9, the operations staff reduced power to within the specified 25% limit. That evening, the system engineer performed tests of the valve operator devices and confirmed that the valve was mechanically stuck, later determined to be due to being jammed by a failed strainer.

No items of noncompliance were identified.

c. System Flow Path Lineup for Coolant Injection

Technical specification section 3.4.9.2 requires that two shutdown cooling modes of RHR system be OPERABLE. Technical specification section 3.5.2 requires at least two of the ECCS systems to be OPERABLE, of the available five systems (three RHR/LPCI, one LPCS, one HPCS). Normally, both of these requirements can be met simultaneously, and "Action Statements" are included in the technical specifications for conditions where these requirements cannot be met. For a condition of only one shutdown cooling mode, the Action Statement requires daily demonstration of operability of an alternate decay heat removal method. For a condition of only one ECCS system, the action statement requires suspending all operations that have potential for draining the reactor vessel. (There did not appear to be any such operations in progress at the time of the review discussed below.)

On June 26 the pumps RHR-B and RHR-C were out of service for inspections and repairs of motor/pump couplings. The high pressure core spray system (HPCS) was also inoperable. The low pressure core spray system (LPCS) was operable. The operations staff apparently considered that the LPCI/RHR-A could serve as the single shutdown cooling mode loop, and simultaneously meet the requirement for one of the two ECCS loops (LPCI/RHR-A plus LPCS). The LPCI/RHR-A flow path was aligned to draw suction from the reactor recirculation loop, for shutdown cooling mode of operation (shutdown cooling was not needed nor in progress, and the pump was not running). Initiation of LPCI mode would then require manual switching to open the suppression pool suction valve and close the shutdown cooling

path valve. The applicable technical specifiction section 3.5.2 requires that the LPCI/RHR-A subsystem "have a flow path capable of taking suction from the suppression chamber and transferring the water to the reactor vessel." The operations crew apparently believed that the ability to manually open and close valves to adjust the flow path constituted the required capability. The control room logs and shift turnover records contained no reference to entry into any technical specification "Action Statements".

The inspector advised the day shift manager that the above LPCI/RHR-A valve lineup action was incorrect, (based upon FSAR section 7.3 description that the LPCI system "is designed to operate automatically for at least 10 minutes without any actions required by the control room operator" and "pump suction from the suppression pool valves have their control switches keylocked in the open position, and thus require no automatic (nor manual) open signal for system initiation." A regional inspection supervisor discussed this matter with the operations manager, who stated that steps would be taken to clarify this matter with the operations staff. This was reiterated at the exit meeting. This matter is unresolved pending review of applicable training records. (84-18-01)

No items of noncompliance were identified.

d. Emergency Core Cooling System Lineup

While the plant was shut down and the drywell open on June 26 the inspectors entered the drywell and verified the locked open position of the manual isolation valves of the LPCI, HPCS and LPCS injection lines to the reactor vessel. They also examined the general condition of the testable check valves. A general survey of equipment condition (e.g. evidence of leaks, loose connections, damaged or deformed supports) was also conducted. The inspectors observed some damage to the waterproof jackest of flexible conduit for isolation valve RWCU-V-1 and testable check valve RHR-V-50B; these included 12-inch long splits or missing lengths of jackets. The licensee conducted a quality control inspection of these items, prepared nonconformance reports, and stated that the covers would be subject to repairs for cosmetic reasons. The plant engineering representative stated that the conduits had waterproof seals at the junction boxes, as part of a recent equipment qualifications corrective action program (required as described in the Safety Evaluation Report Supplement 3). This is an open item pending review of the details of implementation of the corrective action program and the nature of the seals at the specific valves observed. (84-18-02)

5. Engineered Safety Feature Verification

The inspector verified the operability of the control rod drive scram system by examination of 50 hydraulic control units, including verification that each scram isolation valve was open, accumulator pressure was above 1000 psig, and the air operated scram valves on each unit were not blocked or bound by loose parts. The inspector also

verified position of breakers in the safety related motor control centers in the reactor building associated with engineered safeguards systems. Control room position indicators and annunciators were checked daily.

No items of noncompliance were identified.

6. Surveillance Program Implementation

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

a. RPS Primary Containment Pressure High

The inspector observed the performance of licensee surveillance procedure 7.4.3.1.1.13, "RPS Primary Containment Pressure High A, C-CFT". The inspector observed that Technical Specification requirements were adhered to, that the required administrative approvals were required prior to initiating the test, that instrumentation was properly calibrated, and that the surveillance test was performed at the required frequency. The inspector independently verified that the system was returned to service and that all protective actions which occurred during the surveillance had been reset by the operator. This surveillance received special attention by the inspector because prior performance of this surveillance had caused a reactor scram due to procedural deficiencies. These procedural deficiencies were corrected prior to performance of the surveillance documented above.

b. ADS Trip System B

The inspector observed licensee performance of approved surveillance procedure 7.4.3.3.1.44, "ADS Trip System B on ADS Timer-CFT." The performance of this procedure requires the installation of two electrical jumpers. The inspector observed the installation and removal of the two jumpers but noted that jumper tags were not used, that the Shift Manager was not notified prior to their installation or removal, and that independent verification was not made of the installation. Procedure 1.3.9 describes the use and control of jumpers for safety-related and non-safety-related equipment in accordance with Technical Specification 6.8.1. It describes the required content of other procedures, which may include instructions for use of jumpers. It appears that procedure 7.4.3.3.1.44 did not include the instructions prescribed by procedure 1.3.9, nor were such required instructions implemented. This appears to be an item of noncompliance (84-18-03).

7. Monthly Maintenance Observation

Portions of selected safety-related systems maintenance activities were observed. By direct observation and review of records, the inspectors

determined whether these activities were violating LCOs, that the proper administrative controls and tagout procedures were followed, that equipment was properly tested before return to service, and independently verified that the equipment was returned to service. The inspector also reviewed the outstanding job orders to determine if the licensee was giving priority to safety related maintenance and that excessive backlogs which might affect system performance were not developing. The systems selected for maintenance observation are listed below.

a. RHR A and RHR B High/Low Pressure Alarms

The inspector observed the calibration and maintenance of the RHR A and RHR B Pressure Indicators. Maintenance was being performed under two Maintenance Work Requests (MWR #AY4294 and #AY4293), in accordance with an approved plant procedure, and required that the local instrumentation be adjusted to have its setpoints within the tolerances specified on the Instrument Master Data Sheet. The inspector verified that the Instrument Master Data Sheet was verified as current prior to its use, that all instrumentation used was within calibration, and that proper approvals were obtained prior to the initiation of work.

b. Steam Air Ejector Shop Fabrication/Welding

The inspector discussed the availability of weld procedures for work in progress with the fabrication shop foreman and a senior welder. From a cabinet in the shop area, the foreman retrieved a copy of the approved Maintenance Work Procedures manual and a binder of welding related documents which he offered as the welding procedures. (This binder was later identified by the senior welder as his personal uncontrolled copy of welding related documents.) Neither one of these individuals clearly demonstrated an ability to differentiate between the Weld Procedure Specification (WPS), the welding Procedure Qualification Record (PQR), and the Welder Qualification Record relevent to the welding in progress, i.e. a WPS-P1/P8-GTAW process specified on the weld record and the weld rod withdrawal slip. Following this exercise, the foreman committed to review the MWP manual and review the WPS documents with the shop welders.

The inspector examined the weld record and weld material record and noted that critical parameters such as weld material, process, preheat and interpass temperature were identified thereon, without need to refer to the referenced WPS. Other items in the WPS, such as electrical parameter limits and joint preparation configurations, were not included outside the WPS itself. Although the work in-progress was Quality Class II, there was no indication that the unfamiliarity with the WPS documents was limited to Quality Class II, non-safety-related work activities. The inspector interviewed the Plant Maintenance Manager and the Quality Assurance and Quality Control Supervisors regarding these observations. The QA/QC supervisors stated that a planned surveillance activity had just commenced relative to the fabrication shop activities and that the inspector's observations would be included in the direction and

expansion of the scope of that effort. This matter is unresolved. (84-18-04)

c. Turbine Bypass Valve and Strainer Repair

The inspector observed work controls for removal of strainer basket parts from the internals of turbine generator bypass valve #3. Radiation work permits, monitoring, protective clothing, radiation zone controls were formally implemented. Parts were collected and weighed and compared to the weight of new strainer baskets to assure retrieval of all parts from within the valve. This work included reference to vendor information and technical direction by the system engineer. Generic aspects were considered and the other four bypass valves examined once it was determined that the strainer basket upstream of valve #3 had disintegrated and become jammed in the bypass valve.

No items of noncompliance were identified.

d. Residual Heat Removal System Pump Repair

The inspector observed the work activities and controls for repair of the RHR-B pump wear rings. An approved disassembly/reassembly procedure was used, with inclusion of quality control verification hold points. The hold points appeared appropriate, although they did not include some items which might be presumed to be a quality control function (e.g. verification of finished diameter of impeller shaft which had been machined to remove the seized wear ring, and verification of impeller clearances). Spare wear rings were procured in 1979 in accordance with a Quality Class II purchase order, although a certificate of conformance was provided and the vendor (Ingersol-Rand) provided information to indicate that a quality assurance program was in effect for the procurement. The WPPSS plant engineering representative stated that the function of the rings was not such as to warrant Quality Class I procurement, since the rings were to be machined on site to proper size. This procurement action appeared appropriate to the circumstances. The health physics controls appeared appropriate, including routine monitoring, constructed temporary enclosures, and temporary portable filter/fan units for airborne contamination control. The wear ring seizing was a result of missing setscrews inside an assembled pump-motor coupling, which allowed the coupling to loosen and slip down and allow contact of the impeller with the wear rings.

The licensee considered the generic aspects of this matter and disassembled and inspected the couplings of the similar RHR, LPCS and HPCS pumps, finding no further discrepancies. All the (above) pump couplings were drilled and modified setscrews installed. It was not determined whether the missing setscrew were due to WPPSS startup pump disassembly activities, construction, or vendor (General Electric or Ingersol-Rand) oversight. The licensee deferred investigation of this aspect due to assignment of higher priority to other matters. The licensee action appeared adequate to prevent recurrence at WNP-2.

No items of noncompliance were identified.

e. Implementation of Design Change to NS4 BOP Isolation Logic

The inspector observed the performance of MWR AY8500 by the I&C shop. The MWR was written to implement the plant modification discussed in Plant Modification Record (PMR) 2-84-460-0. This modification required the rewiring of control room panels to provide two divisions of power for the Reactor Protection System Balance of Plant (BOP) Isolation Logic. Previous wiring of the BOP logic provided no division of power and because of this a loss of power to a single RPS bus (B) provided a full isolation to the BOP systems on June 23. Two engineers from the technical staff were present during this rewiring to provide guidance to the I&C technicians. The wiring changes were completed and the new logic tested. The inspector verified that redundant logic was available, that procedures were followed which adequately controlled the activity, that QC inspections were performed as required, and that the equipment was tested before return to service.

No items of noncompliance were identified.

e. Emergency Core Cooling System Logic Problem Correction

On May 1, 1984 the inspector observed the "Automatic Depressurization System (ADS) Residual Heat Removal (RHR) B/C Pump Running Permissive" Annunciator activated in the control room. Neither the RHR B or C pump were running at this time. On May 2 at 0730 the inspector noted that the ADS RHR B/C Pump Running Permissive Annunciator was also activated and neither of the pumps were running. The reactor was in mode 2 at each of these times. When the ADS permissive light is on it indicates that the ADS logic has a signal indicating LPCI or LPCS system available for vessel water makeup. The FSAR Section 7.3 describes the function of the switches in each logic channel: "To assure that adequate makeup water is available after the vessel has been depressurized."

On April 30 the inspector had interviewed the system engineer concerning the subject annunciator. The engineer stated that this problem is related to the immediately adjacent water leg pump annunciator "Pump Discharge Pressure Low": This annunciator comes on when the RHR pumps are shut off (as required) however it doesn't clear once the water leg fill pump repressurizes the piping. The operators cause this light to clear by performing the system shutdown procedure out of sequence. When shutting down they shut the discharge valve of the RHR B/C pump prior to shutting down the pump. This causes the discharge piping of the pump to remain pressurized, causing the low discharge pressure alarm to clear but the ADS permissive light to stay energized because no means exists for the pressure to escape this section of piping because the discharge check valve is held shut by RX pressure. (However, MWR-8177 notes that "The RHR discharge lines were vented to reduce pressure but the permissive signal comes back in after the keep-full pump repressurizes.")

The responsible system engineer stated that correction of this item was not one of his top priorities. This was substantiated by two maintenance work requests (MWR-AY-4666 and AY8177), which were provided to the engineer on April 19 after review by the electrical shop (the MWRs had been written on April 3 and April 17 respectively). Both of these MWR's had been classified by the shift managers as priority 2, "Failure to complete could affect power generation". (Priority 1 items are defined in WPPSS procedure 1.3.7 as "Failure to complete results in a Technical Specification violation, a reportable occurrence, creates a safety hazard or could damage critical plant equipment.")

On June 8, 1984 the inspector again observed the ADS RHR B/C Pump Running Permissive annunciator illuminated on Panel 601. Reactor conditions were mode 2, 115 psig, Startup in progress. The inspector pointed out to the Shift Manager that when this annunciator is locked in a signal is being supplied to the ADS initiation logic which implies that the RHR B and/or RHR C pumps are running. The Shift Manager immediately ordered the Reactor Operator to bleed pressure out of the discharge line where this pressure is sensed. The operator complied and the annunciator cleared. The plant was not above 128 psig, where the automatic depressurization system is required by technical specifications. Startup continued as operations personnel determined which pressure switches were involved and performed work to correct the condition. The inspector noted that MWR ID tag AY4416 was removed from the annunciator, however the plant computer system (PPICS) indicated that the MWR was still in the System Engineer's hands and had not been routed to maintenance personnel. Also, two previous MWR's (AY8177 and AY4666), address the same problem and were identified in the PPICS as work complete. (MWR AY8177 had been voided by the system engineer May 22, with notation that the problem would be resolved by MWR AY4666).

On June 12, 14, and 15 the inspector requested copies of the above noted MWRs from the system engineer, the Technical Manager, and the Reactor Engineering Supervisor, respectively. Plant management arranged for the system engineer and reactor engineering supervisor to meet with the resident inspectors for examination of these MWRs and review of status of corrective actions. At this time, the engineers had not yet determined a course of corrective action to be taken. No interim operating instructions appear to have been given to the operation staff regarding actions to take when the permissive annunciators alarmed.

On July 2 at 7:00 A.M. the inspector observed the RHR-A and RHR-B/C pump running permissives annunciators activated. The plant was at 7% thermal power, 900 psig pressure. The inspector advised the shift manager that the ECCS system appeared to be inoperable, as described in the plant technical specifiction (sections 1.27, 3.3.1, and 3.5.1). The shift manager took this under advisement, and mentioned it at the plant daily meeting at 7:30. The engineering supervisor stated that he had some rationale for the acceptability of the condition. At 11:00 A.M. the inspector observed the same

condition, at 19% thermal power, apparently having not been corrected; he discussed the technical specifiction implications with the Assistant Plant Manager, who was present in the control room. The manager stated that the matter was under review by the engineering staff, and that the plant appeared to be in a conservative mode since the permissive to the ADS was made-up and would not prevent ADS action. At 1:00 the reactor engineering supervisor advised the inspector that the system pressure had been vented from the lines and the permissive signals cleared.

There was continued licensee staff perception that the false input to the ECCS system logic did not constitute INOPERABILITY of the device, the ADS subsystem, nor the ECCS systems. This appeared to be the basis for inaction in resolving the hardware problem, and inaction in instituting interim procedures for assuring that the system was adequately vented to clear the false input during operations. The failure to take prompt corrective action to resolve the malfunctions/deficiencies, (from April 3 to July 2), eventually lead to the operation with the ECCS system logic deficiency/malfunction observed July 2; this appears to be an item of noncompliance. (84-18-05)

8. Power Ascension Test Program

The inspectors examined equipment, discussed with cognizant personnel, and reviewed records and procedures relative to conduct of the power ascension program described in Chapter 14 of the FSAR.

a. Reactor Core Isolation Cooling Test

The inspector witnessed testing and/or examined the recorder traces and interviewed the shift technical advisor associated with the test condition #2 testing of the RCIC system under the following conditions. In each case the FSAR level I criteria of rated flow within 30 seconds was achieved:

(1) Cold quick start, injection to reactor vessel, control from remote shutdown panel.

(2) Cold quick start, condensate storage tank test mode, 150 psi back-pressure.

(3) Cold quick start, condensate storage tank test mode, 1000 psi back pressure.

No items of noncompliance or deviations were identified.

b. Main Steam Isolation Valve Tests

The inspector witnessed the individual closure time tests of the eight main steam isolation valves (Procedure 8.2.2). The preliminary recorder traces demonstrated that the FSAR principal level 1 criteria of 2.5 to 5.0 seconds was achieved for each valve.

No items of noncompliance were identified.

c. Turbine Generator Trip Tests

The inspector witnessed the test condition #2 generator load rejection (within bypass valve capacity) testing. The reactor pressure and level were perturbed very little by this transient at the power level <25%, and the reactor did not scram. The FSAR criteria appeared to have been met.

No items of noncompliance were identified.

d. Core Performance Tests

The inspector witnessed the entry of plant data into the off-site computer system for BUCLE calculations of core thermal limits. The APLHGR, MCPR, LHGR and CTP limits were within technical specification and FSAR level 1 criteria limits. The inspector independently calculated core thermal power values used in plant surveillances and BUCLE calculations June 2, 15, and 19.

No items of noncompliance were identified.

e. Pipe Supports and Restraint Systems

The inspector accompanied the licensee during their examination of piping supports and restraints in the feedwater and condensate system outside of the primary containment during test condition 2. The inspector verified that the licensee was performing the inspection in accordance with procedure 8.2.17, "Piping System Expansion and Vibration Tests" and discussed inspection results and any corrective action taken to correct discrepant conditions discovered with the licensee.

The inspector visually examined the following pipe supports and restraints, many subject to transient testing, for evidence of (1) deformation, (2) position indicators in the appropriate position, (3) component support structures securely attached to the building structure, (4) fasteners and locking devices not loose or removed, and (5) debris which could effect pipe support or restraint system operation.

Dynamic Pipe Supports (Snubbers)

RRC-SA-6
RHR-383
RRC-SA-16
RRC-SA-20
RHR-387
RFW-151
\+ RHR-147
\+ RHR-158

Fixed Pipe Supports (Spring Hangers)

LPCS-63
LPCS-64
RWCU-139
PWS-28-7A (pipe whip restraint)
PWS-28-7B (pipe whip restraint)
PWS-27-7A (pipe whip restraint)
PWS-27-7B (pipe whip restraint)
\+ RHR-157
\+ RHR-187

Component Support Structures (Frames, Boxes)

RRC-SB-6 (100K loading)
RRC-SA-6
MS-SC-2 (100K loading)
\+ RHR-159
\+ RHR-148
\+ RHR-149

\+ Located outside Primary Containment.

No items of noncompliance were identified.

9. Licensee Event Reports

The inspector reviewed each of the LER's issued during the current report period. Each of these is considered to be closed unless noted otherwise below. The inspector verified that reporting requirements had been met, causes had been identified, corrective actions appeared appropriate, generic applicability had been considered, and the LER forms were complete. Additionally, for those reports identified by asterisk, a more detailed review was performed to verify that the licensee had reviewed the event, corrective action had been taken, no unreviewed safety questions were involved, and violations of regulations or Technical Specification conditions had been identified.

* LER-84-040 - Unscheduled Lockout of the High Pressure Core Spray Diesel Generator (Incorrect jumper placement locks out HPCS diesel)

LER-84-041 - Technical Specification Violation (Diesel generator prelube/warmup)

LER-84-042 - Reactor Scram (Loose hex screws in feedwater pump turbine control linkage resulted in reactor water level trip)

* LER-84-043 - Reactor Trip (Failure to reset relays after test caused reactor water level transient and trip)

LER-84-044 - Reactor Automatic Trip Due to High Pressure (Improper seating of reset solenoid valve caused reactor pressure transient and trip from improper bypass valve action)

LER-84-045 - Reactor Automatic Trip Due to High Pressure (Low control oil pressure caused reactor pressure transient and trip from improper bypass valve action)

LER-84-046 - Spurious Trip of Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

* LER-84-047 - Significant Design Deficiency (Thermal fire barrier insulation omitted from containment penetration sleeve annuli)

* LER-84-048 - Misapplication of Fuses in 250 VDC System (Improper specification of 250 VAC fuses in 250 VDC applications)

LER-84-049 - Spurious Trip of Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

LER-84-050 - Unscheduled Trip of the Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

LER-85-051 - Level 3 Reactor Scram #84-08 (Switching to automatic mode with improper setpoint of condensate demineralizer caused reactor water level transient and trip)

LER-84-052 - Unscheduled Initiation of Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

LER-84-053 - Spurious Initiation of Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

LER-84-054 - RPS Actuation On Turbine Overspeed Testing (Improper test procedure caused cycling of turbine control valves and reactor trip)

LER-84-055 - RCIC Spurious Isolation (Incorrect jumper during testing probably caused RCIC isolation)

LER-84-056 - High Reactor Pressure Scram from Main Turbine Bypass Valve Closure (Failed control circuit closed bypass valves and caused reactor pressure transient and trip)

LER-84-057 - Auto Start of Control Room Emergency Filtration System On Hi Chlorine (Chlorine detector ran out of tape and caused control room ventilation closed cycle initiation)

LER-84-058 - Inadvertent Initiation of Control Room Emergency Filtration Units (Control room ventilation closed cycle initiation from electrical surge to radiation monitor)

* items which were examined on site and which are closed.

** items which were examined on site and which are open.

The following items were examined in more detail on site by the resident inspectors:

(Closed, 84-040) - The inspectors examined equipment, procedures and drawings and interviewed personnel relative to the incorrect placement of the electrical jumper. Technical specification requirements were considered. No items of noncompliance were identified.

(Closed, 84-043) - The inspectors examined procedures and interviewed personnel relative to failure to reset relays during surveillance testing activities. The responsible instrument and control supervisor stated that the affected procedures had been revised to require specifically such resets. The procedures originally included instructions for reactor protection system (RPS) resets, but did not recognize that isolation logic was cross matrixed with the RPS relays in such a manner that separate reset of the isolation relays was required. Additionally, some effort has been implemented to change the relay logic to improve the isolation coordination with RPS logic.

(Closed, 84-047) - The inspector examined penetrations, drawings and interviewed personnel relative to the placement of thermal insulation into the containment penetration sleeve annuli. This material was not specified by original design and did not appear to represent a construction installation breakdown. Adequate corrective action appears to have been taken.

(Closed, 84-048) - The inspectors examined drawings and interviewed personnel relative to replacement of the alternating current rated fuses with direct current fuses. The licensee actions appeared appropriate.

No items of noncompliance were identified.

10. Observations During Plant Tours

The inspector observed the site emergency drill involving use of the Post Accident Sampling System (PASS). The drill involved taking containment air and process water samples from the PASS station, under simulated radiation conditions. The chemistry laboratory was assigned increased workloads to add stress to the situation. Applicable procedures were used, actual samples were handled, and evaluators and controllers attended the various areas of activity. The personnel at the sample station demonstrated strict procedure adherence and care in the their health physics practices.

No items of noncompliance were identified.

11. Special Inspection Topics

a. The inspectors examined records, discussed with cognizant personnel, and inspected plant conditions relative to the following matters requested by the regional office:

Prior to issuance of the plant operating license, the applicant established a master completion list to identify all work known at that time to be necessary for plant completion; the items were each classified as to milestones for planned completion. The list was quite comprehensive and detailed; (it also included many items associated with safety related systems, but which were in themselves of little or no safety significance). The NRC inspectors examined that list to ascertain the adequacy of the applicant's prioritizations, relative to possible safety impact of individual item deferrals. The applicant's prioritizations were found acceptable, and a condition was inserted into the operating license to assure NRC review of any planned reclassification of these items (notwithstanding that additional maintenance work items would be added to the list as operations and power ascension testing activities proceeded). Such reviews were conducted prior to plant pressurization and prior to exceeding 5% power level. Attachment I of the Operating License requires that the original reviewed items be completed by July 1, 1984, except where extensions of individual items are concurred in by an NRC representative. The license condition has been satisfied, as described below.

On June 28, the licensee requested the Senior Resident Inspector to review and concur in a list of 87 items which were proposed to be deferred. A regional inspection supervisor supported an objection to the short review time requested by the licensee, and requested that the safety assessment for each proposed deferral item be documented by the licensee for inclusion in the public record. The licensee engineering management reviewed each item in detail with the Senior Resident Inspector on June 28 and June 29, prior to documentation and prior to submittal of a license condition completion statement to NRC licensing. Between June 28 and June 29 the licensee completed several of the items and better clarified the status and basis for deferral; these were reviewed by the inspector on June 29. The Plant Technical Manager documented the analysis for deferral of each item in a memorandum to the Plant Manager (dated June 30, 1984, issued July 5). The inspector was able to concur with each of the fifty items of the revised list, which included only 29 items or hardware requiring physical work. (The licensee assessment of the 29 items, concurred with by the Senior Resident Inspector), is included in this inspection report (labeled "Attachment 2"). The proposed deferrals had no safety impact on system operability, and showed that the licensee had assured that items with safety impact had been given due priority for completion/resolution. The remaining items were documentation related, but the licensee classified the matter as "OPEN" until completed (e.g. design change may have been installed, drawings temporarily marked for use by the operations staff, and procedure interim revisions issued; however, the incorporation of the change into the record drawings may not yet have been completed).

No items of noncompliance were identified.

The inspector also examined the general plant completion list, to identify plant maintenance items arising subsequent to issuance of

the operating license. He selected 12 items of apparent safety significance for detailed review. The inspector considered the nature of each item relative to its impact on operability of safety related systems and components, need for resolution prior to continuing with plant operations, and whether the licensee had declared the component/system inoperable until repairs had been completed. In each case the licensee actions were acceptable.

No items of noncompliance were identified.

12. Licensee Actions on Previous NRC Inspection Findings

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

a. (Closed) Follow item (83-37-01) - Failure to take effective corrective action regarding diesel generator relays.

The inspector examined procurement, receiving, and material installation records for relays with gold contacts, and ascertained that Model 5133 was procured and installed in the diesel generator panels. Applicable drawings and bill of materials were revised via engineering directives to identify the correct part number (5133). Two relays in the site warehouse had hold tags affixed, and corresponded to the computer identified relays in stock as spare parts. These two relays are in "hold" status pending licensee determination of whether the model number and supporting receiving documents attest to gold contacts or otherwise. This matter is closed.

13. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. Unresolved items disclosed during the inspections are discussed in paragraphs 4.c and 7.b.

14. Management Meeting

On June 29 the inspectors met with the Plant Manager and his staff to discuss a summary of the inspection findings for this period. On July 3 the senior resident inspector met with the Assistant Plant Manager to discuss additional inspection findings since the June 29 meeting.

ATTACHMENT 1

PTL "CO" 9000 Item Status Summary

System No.	#Items	Hardware, (type)	# Items	Software (type)
6.0	8	6 FWC July 1		
		1 Work Priority		
		1 Parts Delivery		
7.1	1	1 System Outage		
8.0	1	1 Work Priority		
10.0	1	1 System Outage		
11.0	1	1 Work Priority		
15.0	2	1 Parts Delivery		
		1 System Outage		
16.3			1	1 SDR Closure
18.2	1	1 Parts Delivery		
19.0	2	2 Engineering		
20.0	2	2 Engineering		
22.0			1	1 SDR Closure
25.0	2	2 Parts Delivery		
36.0	5	4 FWC July 1	1	1 SDR Closure
		1 Engineering		

System No.	#Items	Hardware, (type)		#Items	Software (type)	
46.1	1	1	OCS			
46.5	2	2	Parts			
46.8				1	1	PMR Closure
47.0	1	1	Parts	1	1	PMR Closure
58.0	4	3	Parts			
		1	System Outage			
80.0				6	6	PMR Closure
109.0	5	4	System Outage			
		1	Engineering			
TOTALS	39 Hardware			11 Software		

FWC July 1	10	SDR Closure	3
Parts Delivery	11	MWR Closure	0
System Outage	8	PMR Closure	8
Engineering	6		
Work Priority	3		
OCS	1		

ATTACHMENT 2

Assessment of Open Hardware Construction Completion Items after 7/1/84

PTL Item	System #	Item Description	Assessment	Scheduled Completion
350	6.0	Valve stem dust cover stud broken on RCIC-V-22	RCIC-V-22 is the test return valve to the CST; valve normally closed. Infrequent valve operation in a mild environment does not require dust cover integrity.	Parts
353	6.0	RCIC-V-1 motor operator rewound by uncertified Vendor.	RCIC-V-1 is the turbine trip/throttle valve, normally open, spring action to trip closed, motor operator does not have to function as valve can be manually positioned; winding isolation to ground has been shown to be adequate, replace motor when parts delivered.	1st Refueling
412	7.1	Replace EP-2 grease in HPCS-V-4 with EP-0 or EP-1.	EP-2 grease is nearly identical to EP0 EP1, however manufacturer specifies EP0/EP1. Valve stroke surveillances satisfactory, replace grease to remove any questions.	M2 Outage
460	8.0	Relable two (2) valves in LPCS.	LPCS-V-27 and LPCS-V-29 are manual, drain valves which are mislabeled, Ops Procedures use numbers not names, therefore direction is correct, nomenclature is not.	
629	10.0	Replace Agastat Relay Bases in SLC per IEN 82-048.	Work requires system outage, relay base inspection shows no evidence of problems identified in IEN; continued operation is acceptable.	M2 Outage

PTL Item	System #	Item Description	Assessment	Scheduled Completion
715	11.0	Replace valve operator handle on RCC-V-94	Manual operator has interference with plant support structure, requires opening with wrench, operator inconvenience.	Sept. 84
739	15.0	CRD SDV Analog Trip Unit Meter Indicator defective.	Meter indication does not effect trip function therefore acceptable to run until replacement parts are available.	Parts
752	15.0	Replace rectifiers in RPS EOC-RPT trip circuit.	Presently installed rectifiers are identical to qualified diodes in model and for fit, and function; circuit is presently functional; Tech. Specs. allow operation w/o RPT instrumentation; mod. requires system outage and massive retest, therefore delay to M2 is satisfactory.	M2 Outage
780	18.2	Replace RDCS test card as it does not function properly.	Only the RDCS self test mode is affected; trip function is not affected; new card facilitates easier self tests/ surveillances. Parts delivery from GE.	Parts
791	19.0	Retag Cable AP7AA-9010 to 1P7AA-9010	Cable tagging error need to be rectified, it has no impact on plant operation or maintenance activity.	Sept. 84
793	19.0	Retag Cable BP8AA-9009 to 2P8AA-9009	Cable tagging error needs to be rectified, it has no impact on plant operation or maintenance activity.	Sept. 84

PTL Item	System #	Item Description	Assessment	Scheduled Completion
858	20.0	NSSE-EG-1A, "B" Fuel Prep Machine improvement.	The Fuel Prep Machines are used to handle irradiated fuel; this GE product improvement item can be implemented when time permits.	Prior to R1
863	20.0	Complete special SLT-S 201.1-1	This Preop activity on the Fuel Prep Machines is most appropriately performed after PTL 858 is complete.	Parts
1099	25.0	Replace start/stop switch on CMS-SR-13 Sample Pump.	Sample Pump start/stop switch works but won't auto start following pump trip; requires operator action. However the entire rack is not required to be operable but is covered by JIO.	Parts
1100	25.0	Replace start/stop switch on CMS-SR-14 Sample Pump.	Sample pump start/stop switch works but won't auto start following pump trip; requires operator action. However the entire rack is not required to be operable but is covered by JIO.	Parts
1125	36.0	Install quick disconnects on TEA-SR-26A and REA-SR-27A.	Disconnects facilitate easier calibration; rad monitors are already calibrated, change is for convenience sake.	Sept. 84
1304	46.1	Terminate cables between Process Computer and TRN1, N2 Watthour meter.	Terminations complete and retested, other unrelated work on same MWR still open. OCS cannot close.	Aug. 84

PTL Item	System #	Item Description	Assessment	Scheduled Completion
1335	46.5	Replace overcurrent protection device on BKR 8-81 from CO-7 to CO-9.	CO-9 O/C protection provides greater margin in relay coordination scheme but CO-7 device is adequate.	M2 Outage
1338	46.5	Replace overcurrent protection device on BKR 7-71 from CO-7 to CO-9.	CO-9 O/C protection provides greater margin in relay coordination scheme but CO-7 device is adequate.	M2 Outage
1466	47.0	Replace air relief valves in Diesel Starting Air System as valves weep.	Relief valves provide thermal expansion over-pressure protection if all four (4) receivers in a bank are isolated and room temperature increases significantly. The DSA System (each D/G set) has 2 banks, each capable of seven (7) D/G starts. Each DSA System has two (2) compressors for make-up. A small leak throughthe RV will not affect system operation.	Parts
1509	58.0	Install strainers in cooling water line to SSW-P-1A to keep foreign material out of pump.	SSWP-1A has operated over two (2) years w/o plugging of the cooling water line. Continued operation is acceptable.	Parts
1510	58.0	Install strainer in cooling water line to SSW-P-1B.	SSWP-1A has operated over two (2) years w/o plugging of the cooling water line. Continued operation is acceptable.	Parts
1559	58.0	Replace existing galvanized intake screens in the SSW basin with stainless steel screens.	Screen corrosion is a concern when the pond is treated with sulpheric acid, to date it has not been treated; visual inspection of screens indicates no corrosion, therefore operation to R1 is acceptable.	R1

PTL Item	System #	Item Description	Assessment	Scheduled Completion
2030	58.0	Install plastic plugs in spray ring supports to minimize bolt corrosion.	It is more efficient to complete this action after major corrosion protection items on the spray rings are complete in R1, operation is acceptable because corrosion rate is within corrosion allowance through R1.	R1
1854	109.0	Torque pipe whip restraints PWS 4-2, 28-15.	This activity is a part of the Power Ascension Test Program scheduled for M2 following system walkdowns at full temperature and after several heatup/cooldown cycles.	M2 Outage
1924	109.0	Set A-A dimension on PWS	This activity is a part of the Power Ascension Test Program scheduled for M2 following system walkdowns at full temperature and often several heatup/cooldown cycles.	M2 Outage
1926	109.0	Set A-A dimension on PWS	This activity is a part of the Power Ascension Test Program scheduled for M2 following system walkdowns at full temperature and often several heatup/cooldown cycles.	M2 Outage
2010	109.0	Complete hot adjustment of PWS.	This activity is a part of the Power Ascension Test Program scheduled for M2 following system walkdowns at full temperature and often several heatup/cooldown cycles.	M2 Outage

PTL Item	System #	Item Description	Assessment	Scheduled Completion
2020	109.0	Grout around shielded window in solid radwaste handling.	License condition Attachment 3, Item 11 allows completion of solid radwaste 1 year after license issuance.	Dec. 84