

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

Report No. 50-344/82-20

Docket No. 50-344 License No. NPF-1 Safeguards Group \_\_\_\_\_

Licensee: Portland General Electric Company

121 S. W. Salmon Street

Portland, Oregon 97204

Facility Name: Trojan

Inspection at: Rainier, Oregon

Inspection conducted: June 1 - July 2, 1982

Inspectors: G.B. Zwetzig for July 15, 1982  
M. H. Malmros, Senior Resident Inspector Date Signed

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Date Signed

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Date Signed

Approved By: G.B. Zwetzig July 15, 1982  
G. B. Zwetzig, Chief, Reactor Date Signed  
Projects Section 1, Reactor Operations  
Projects Branch

Summary:

Inspection on June 1 - July 2, 1982 (Report 50-344/82-20)

Areas Inspected: Routine inspections of plant shutdown operations, surveillance testing, maintenance, refueling activities, security, and follow-up on Licensee Event Reports. The inspection involved 105 inspector-hours by the NRC Senior Resident Inspector.

Results: No items of noncompliance or deviations were identified.

## DETAILS

### 1. Persons Contacted

- \*C. P. Yundt, General Manager
- C. A. Olmstead, Manager, Operations and Maintenance (Acting)
- R. P. Schmitt, Manager, Technical Services (Acting)
- J. D. Reid, Manager, Plant Services
- D. R. Keuter, Operations Supervisor
- D. W. Swan, Maintenance Supervisor
- A. S. Cohlmeier, Engineering Supervisor (Acting)
- G. L. Rich, Chemistry Supervisor
- T. O. Meek, Radiation Protection Supervisor
- R. E. Susee, Training Supervisor
- D. L. Bennett, Control and Electrical Supervisor
- P. A. Morton, Quality Assurance Supervisor
- R. W. Ritschard, Security Supervisor
- H. E. Rosenbach, Material Control Supervisor
- J. K. Aldersebaes, Manager, Nuclear Maintenance and Construction

The inspector also interviewed and talked with other licensee employees during the course of the inspection. These included shift supervisors, reactor and auxiliary operators, maintenance personnel, plant technicians and engineers, and quality assurance personnel.

\*Denotes those attending the exit interviews.

### 2. Operational Safety Verification - Refueling Shutdown

During the inspection period, the inspector observed and examined activities to verify the operational safety of the licensee's facility. The observations and examinations of those activities were conducted on a daily, weekly, or biweekly basis.

On a daily basis, the inspector observed control room activities to verify the licensee's adherence to limiting conditions for operations as prescribed in the facility technical specifications. Logs, instrumentation, recorder traces, and other operation records were examined to obtain information on plant conditions, trends, and compliance with regulations. On the occasions when a shift turnover was in progress, the turnover of information on plant status was observed to determine that all pertinent information was relayed to the oncoming shift.

During each week, the inspector toured the accessible areas of the facility to observe the following items:

- a. General plant and equipment conditions.
- b. Maintenance requests and repairs.

- c. Fire hazards and fire fighting equipment.
- d. Ignition sources and flammable material control.
- e. Conduct of activities in accordance with the licensee's administrative controls and approved procedures.
- f. Interiors of electrical and control panels.
- g. Implementation of the licensee's physical security plan.
- h. Radiation protection controls.
- i. Plant housekeeping and cleanliness.
- J. Radioactive waste systems.

The Licensee's equipment clearance control was examined weekly by the inspector to determine that the licensee complied with technical specification limiting conditions for operation, with respect to removal of equipment from service. Verification was achieved by selecting one safety-related system or component weekly and verifying proper breaker, switch, and valve positions, both for removing the system or component from service and returning it to service.

During each week, the inspector conversed with operators in the control room, and other plant personnel. The discussions centered on topics relating to general plant conditions, procedures, security, training, and other topics related to the work activities involved. Three groups were the subject of observation during shift turnover - the control room operators, the refueling crew, and security personnel.

The inspector examined the licensee's nonconformance reports to confirm that the deficiencies were identified and tracked by the system. Identified nonconformances were being tracked and followed to the completion of corrective action.

Logs of jumpers, bypasses, caution, and test tags were examined by the inspector. No jumpers or bypasses appeared to have been improperly installed or removed or to have conflicted with the technical specifications. Implementation of radiation protection controls was verified by observing portions of area surveys being performed, and by examining radiation work permits currently in effect to see that prescribed clothing and instrumentation were available and used. Radiation protection instruments were also examined to verify operability and calibration status.

During examination of the reactor lower core plate and the core support structure of the lower reactor internals for fuel pellets dislodged from the damaged fuel assemblies (reference: Inspection Report No. 50-344/82-18), the licensee located and identified portions of the 10-inch thermal sleeve from a safety injection/ accumulator discharge line nozzle connection to cold leg piping.

The pieces of the thermal sleeve were located just below the lower core plate. As a result of further investigations including radiographic and ultrasonic examinations, the licensee concluded that all four 10-inch thermal sleeves were missing from their proper position in their respective pipe nozzles. Removal of the lower reactor internals and further underwater video inspections located all portions of the thermal sleeves (three essentially intact but deformed and one in three separate pieces). Also during the video examinations, fuel pellets (approximately twenty) were located on the periphery of the core support structure. The licensee was able to remove all thermal sleeves and approximately eight of the pellets using an underwater eductor system. Approximately twelve pellets remain on the core support structure in an inaccessible location.

The licensee is preparing applicable safety evaluations for review by the NRC prior to the resumption of facility operation. These safety evaluations address operation without the 10-inch thermal sleeves and the effect of fuel pellets on the periphery of the core support structure during the next fuel cycle.

Examination of the remaining thermal sleeves (of this design) in the reactor coolant system revealed a failed weld on the surge line loop connection thermal sleeve. The licensee plans to remove the thermal sleeve to preclude the possible damage to reactor coolant system components should it break loose during operation, as occurred with the 10-inch thermal sleeves. Resumption of refueling operations will follow completion of the surge line thermal sleeve removal work on or about July 21, 1982.

No items of noncompliance or deviations were identified.

### 3. Maintenance

Maintenance activities involving preventive and corrective maintenance were observed by the inspector during the inspection period. Observations by the inspector verified that proper approvals, system clearances, and tests of redundant equipment were performed, as appropriate, prior to maintenance of safety-related systems or components. The inspector verified that qualified personnel performed the maintenance using appropriate maintenance procedures. Replacement parts were examined to determine the proper certification of materials, workmanship and tests. During the actual performance of the maintenance activity, the inspector checked for proper radiological controls and housekeeping, as appropriate. Upon completion of the maintenance activity, the inspector verified that the component or system

was properly tested prior to returning the system or component to service. During the inspection period, maintenance activities observed were associated with the area radiation monitors, centrifugal charging pump, boric acid storage tanks, and the reactor coolant system.

No items of noncompliance or deviations were identified.

#### 4. Surveillance

The surveillance testing of safety-related systems was witnessed by the inspector. Observations by the inspector included verification that proper procedures were used, test instrumentation was calibrated and that the system or component being tested was properly removed from service if required by the test procedure. Following completion of the surveillance tests, the inspector verified that the test results met the acceptance criteria of the technical specifications and were reviewed by cognizant licensee personnel. The inspector also verified that corrective action was initiated, if required, to determine the cause for any unacceptable test results and to restore the system or component to an operable status consistent with the technical specification requirements.

Surveillance tests witnessed during the inspection period were associated with the following systems: electrical distribution system, emergency electrical power system, and the liquid radiological waste system.

No items of noncompliance or deviations were identified.

#### 5. Licensee Event Report (LER) Follow-up

The circumstances and corrective actions described in LER Nos. 81-31, 82-07, and 82-08, were examined by the inspector. The inspector found that each report had been reviewed by the licensee and reported to the NRC within the proper reporting interval. The corrective actions for each event were as follows:

LER 81-31 (Closed): The licensee completed modifications to the valve operators for MOVs 2069 A & B in accordance with design change, RDC No. 80-103. This design change removed the brake and slowed the travel time of the valve. The torque switch actuators were replaced with a new part from the manufacturer. The expected operational torque valves have been reduced as a result of the design and proper operation of the torque switch has been verified by in plant tests for each of the valves.

LER 82-07 (Open): The analysis to resolve the proper limits for containment pressure during plant operation will be completed by July 30, 1982. Administrative controls to restrict containment pressure to less 0.5 psig will be in effect prior to the entry into Mode 4 following completion of the current refueling outage.

LER 82-08 (Open): The battery charger (D23) was repaired and tested satisfactorily. The inspector verified that applicable tests had been completed to assure that the same diode failure did not exist on the three other battery chargers. This item will remain open pending completion of the licensee's review of procedures to verify that the acceptance criteria in maintenance surveillance procedures are consistent with the criteria contained in the technical specification.

No items of noncompliance or deviations were identified.

6. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) on June 17 and July 2, 1982. During these meetings the inspector summarized the scope and findings of the inspection.