

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

REGION V

Report No. 50-344/78-20

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: September 5-29, 1978

Inspectors: *D. M. Sternberg*  
M. H. Malmros, Reactor Inspector

10/16/78  
Date Signed

Approved By: *D. M. Sternberg*  
D. M. Sternberg, Chief, Reactor Project  
Section 1, Reactor Operations and Nuclear  
Support Branch

10/16/78  
Date Signed

Summary:

Inspection on September 5-29, 1978 (Report No. 50-344/78-20)

Areas Inspected: Routine inspections by the Resident Inspector of plant operations, maintenance, surveillance testing, facility security and other specific activities independently selected by the inspector. The inspection involved 84 inspector-hours by the NRC Resident Inspector.

Results: No items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

- \*B. D. Withers, Plant Superintendent
- \*F. H. Lamoureaux, Assistant Plant Superintendent
- R. P. Barkhurst, Operations Supervisor
- D. L. Bennett, Instrument and Control Supervisor (Acting)
- M. L. Dawson, Quality Assurance Supervisor
- C. J. Fleming, Administrative Supervisor
- D. F. Kielblock, Training Supervisor
- W. S. Orser, Engineering Supervisor
- L. W. Quinn, Chemistry Supervisor
- D. J. Thompson, Maintenance Supervisor (Acting)
- T. D. Walt, Radiation Protection Supervisor

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

\*Denotes those attending the exit interviews.

### 2. Plant Operations

#### a. Facility Logs and Operating Records

The inspector examined the log entries contained in the control room log and the shift supervisors log for facility operations performed during September 1978. The log entries were found to have been consistent with the requirements of the facility administrative orders and to accurately reflect the mode 5-cold shutdown status of the facility. Facility logs were reviewed by applicable staff members and operating orders issued by the operations supervisor did not conflict with the intent of the technical specification requirements. Sufficient information was contained in the control room log and the shift supervisors log to identify potential problems and to verify compliance with technical specification reporting requirements and limiting conditions for operation.

#### b. Facility Tour and Observation of Operations

Tours of the facility were made by the inspector in the control building, reactor auxiliary building, fuel building, intake structure, and the turbine building. During

the tours, assessments of equipment and plant conditions were made with the following observations:

- (1) Instrumentation for monitoring the cold shutdown status of the plant was operating.
- (2) Radiation controls were properly established.
- (3) Facility cleaning to remove material and debris which had accumulated during the refueling outage was in progress. Significant improvement in house-keeping conditions was observed in the 5' and 25' levels of the reactor auxiliary building. No conditions were observed that represented a fire hazard or personnel safety hazard. Fire protection equipment was found operable.
- (4) Piping systems for those systems in operation did not contain fluid leaks or show evidence of excessive pipe vibrations.
- (5) Detailed system alignment and operation were verified for the containment spray system, residual heat removal system, AC power system, and the fire protection system. Compliance with the limiting conditions for operation of the technical specifications for mode 5 operations was verified for these systems.
- (6) Control room observations verified that the facility manning was proper and discussions with shift supervisors and control operators revealed that they were cognizant of the effect of annunciated alarms on plant operations. Shift turnovers were found to be performed in accordance with administrative orders and good watch-standing practices.
- (7) Sampling of the reactor coolant system via the resident heat removal system was observed. The analysis of the sample for RCS boron concentration was performed in accordance with the applicable facility chemistry procedure.

No items of noncompliance or deviations were identified.

3. Physical Protection

Based on discussions with licensee representatives, observations, and examinations of facility procedures, the inspector verified that the measures employed for the physical protection of the facility were consistent with the requirements of the physical security plan, applicable administrative orders, and regulatory requirements. Specific aspects of physical protection examined by the inspector included the following:

- a. Protected area and vital area barriers were verified to be properly closed and locked.
- b. Personnel provided access to the protected and vital areas were properly authorized, identified and badged. Personnel, vehicles, and packages were searched as required by the physical security plan.
- c. Escorts were provided for personnel and vehicles when required inside the protected area.
- d. The security organization for each shift was found to be properly organized and manned.
- e. Shift turnover, shift routines, and communications were accomplished in accordance with the requirements of the physical security plan and applicable administrative orders.

No items of noncompliance or deviations were identified.

4. Maintenance

Maintenance operations on the auxiliary feedwater pump diesel and the fire pump diesel were witnessed by the inspector and verified to have been performed in accordance with established procedures and technical specification requirements. During the examination of maintenance activities related to this equipment, the inspector made the following observations:

- a. Maintenance Request Nos. 78-3784 and 78-3974 had been properly prepared to provide the required administrative approval prior to initiating the work.
- b. The maintenance was performed using Maintenance Procedure MP-7-5, "Auxiliary Feedwater Pump (Diesel Driven)," and Maintenance Procedure MP-12-8, "Fire Pump Diesel Engine."

- c. Facility procedures required that each diesel engine be functionally tested prior to returning the components to an operational status.
- d. The maintenance was performed by qualified members of the maintenance organization.
- e. The inspector noted that the results of the compression tests run on the auxiliary feedwater pump diesel yielded values lower than those specified in the maintenance procedure. Upon checking with the diesel supplier, the licensee determined that the lower compression readings were attributed to a difference in methods for obtaining the readings. The procedure values were based on values by taking compression readings with all cylinder injectors removed. The licensee utilized a method where the injectors were left installed in all cylinders during the test. The diesel supplier stated that the values obtained were acceptable for the method used by the licensee and were indicative of satisfactory diesel performance. The licensee plans to revise the method of taking compression readings to require all injectors to be removed except for the cylinder undergoing compression testing during future maintenance. The inspector will verify during subsequent inspections that all appropriate revision to MP-7-5 is issued. This item was discussed during the exit interview. (344/78-20-01)
- f. System tagging operations and plant status controls properly indicated the performance of the maintenance activities.
- g. Applicable limiting conditions for operation as specified in the technical specifications were met during the above maintenance.

No items of noncompliance or deviations were identified.

5. Surveillance Testing

The inspector observed the performance of technical specification required testing of the containment spray system. The specific test methods used by the licensee were specified in periodic operating test, POT-4-1, "Containment Spray System, Pump and Eductor Performance." Observations made by the inspector included the following:

- a. The test prerequisites were met.
- b. Applicable limiting conditions for operation were met.
- c. The requirements of the test procedure were adhered to by the personnel performing the test.
- d. The test was performed by qualified operations personnel.
- e. The test results were reviewed by the licensee and found to be within the acceptance criteria specified in the technical specifications.

No items of noncompliance or deviations were identified.

6. Licensee Event Followup

The inspector examined the circumstances and corrective action taken by the licensee as a result of the loss of three of the four sources of offsite power on September 14, 1978, at approximately 2:17 a.m. This loss of offsite power was caused by the crash of a light twin engine aircraft in the vicinity of the offsite power transmission lines approximately one mile West of the facility. Based on a review of facility logs and discussions with licensee representatives, the operation of the facility during the occurrence was as follows:

- a. The limiting conditions for operation for mode 5-cold shutdown conditions were met throughout the occurrence since one source of offsite power was available.
- b. Residual heat removal system flow through the core was interrupted for approximately three minutes when the operating pump lost power. The control operator immediately restored flow by starting the residual heat removal pump powered from the electrical bus with offsite power available.
- c. Standby sources of power were available for the operation of facility systems at all times, if required.
- d. Response of operations and security personnel to the occurrence was consistent with the requirements of applicable emergency procedures.
- e. The offsite AC power supply was returned to a normal lineup approximately twelve hours following the incident.

No items of noncompliance or deviations were identified.

7. Safety Injection System Reset Feature

Discussions were held with licensee representatives regarding the procedural controls which are used to provide operators with the necessary guidance for the proper use of the safety injection system reset feature. It was determined that three facility procedures should be revised to include a precautionary note that alters the facility operator to the "unarmed" condition of the safety injection system actuation devices when the reset feature is used. The licensee indicated that the procedure revisions would be completed prior to entry into the mode 3 or not later than November 3, 1978. (347/78-20-02)  
The following procedures will be revised:

- a. Off-Normal Instruction ONI-4, "Spurious Safety Injection"
- b. Emergency Instruction EI-1, "Loss of Reactor Coolant"
- c. Emergency Instruction EI-2, "Loss of Secondary Coolant"

No items of noncompliance or deviations were identified.

8. System and Procedure Review

The inspector examined system operating procedures and verified system alignment for correct valve positions, proper locking of "locked closed" or "locked open" valves, and evaluated the general operability of system components for the following plant systems.

- a. Auxiliary Feedwater System
- b. Seismic Monitoring and Recording System
- c. Component Cooling Water System
- d. Main Steam System

No items of noncompliance or deviations were identified.

9. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) on September 8, 22, and 29, 1978. During these meetings, the inspector summarized the scope and findings of the inspection, including those items discussed in Paragraphs 4 and 7.