

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

REGION V

Report No. 50-344/78-21

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 18-22, 1978

Inspectors: F. A. Wenslawski 10/19/78  
F. A. Wenslawski, Chief, Reactor Radiation Safety Section Date Signed  
J. B. Baird 10/19/78  
J. B. Baird, Radiation Specialist Date Signed  
H. S. North 10/19/78  
H. S. North, Radiation Specialist Date Signed

Approved By: H. E. Book 10/19/78  
H. E. Book, Chief, Fuel Facility and Materials Safety Branch Date Signed

Summary:

Inspection on September 18-22, 1978 (Report No. 50-344/78-21)

Areas Inspected: Routine announced inspection of emergency planning, coordination with offsite agencies, facilities, equipment, training and procedures, observation of two emergency plan exercises and critiques; radiation protection, organization, staffing, training; radioactive waste systems, operations, confirmatory measurements; licensee action on IE Bulletins and Circulars. The inspection involved 71 inspector-hours onsite by three inspectors.

Results: No items of noncompliance or deviations were identified.

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## DETAILS

### 1. Persons Contacted

#### Principal Licensee Employees

- \*C. Goodwin, Assistant Vice President
- \*B. Withers, Plant Superintendent
- \*F. Lamoureux, Assistant Plant Superintendent
- \*T. Walt, Radiation Protection Supervisor
- \*R. Russell, Assistant Radiation Protection Supervisor
- G. Bailey, Radiation Protection Engineer
- \*L. Quinn, Chemistry Supervisor
- \*D. Keilblock, Training Supervisor
- \*J. Pickett, Training Assistant
- S. Nichols, Training Assistant
- \*M. Dawson, QA Supervisor
- \*J. Reid, Senior QA/QC Inspector
- J. Taylor, Shift Supervisor
- T. Andone, Shift Supervisor
- T. Gray, Control Operator
- K. Erickson, Assistant Control Operator
- T. Grable, Auxiliary Operator
- N. Ernst, Auxiliary Operator
- S. Sautter, CARP Technician
- R. Kohout, Industrial Relations/Trojan Safety Coordinator
- L. Lahart, Generation Licensing and Analysis Department (GLAD)

#### Other Personnel

- \*H. Haynie, State of Oregon, Department of Energy
- P. DeBoer, Lt. J. G., Readiness Plans and Training, U. S. Coast Guard, 13th District
- J. Clifton, Secretary, Cowlitz County, Department of Emergency Services
- B. Kreitzer, Secretary, Cowlitz County, Department of Emergency Services
- J. DeFrance, Director, Columbia County, Office of Emergency Services
- L. Gillespie, Chief, Rainier Rural Fire Protection District

2. Licensee Action on Previous Inspection Findings

(Closed with exception noted) Noncompliance (50-344/78-11): The licensee's timely (August 15, 1978) response to a Notice of Violation dated July 25, 1978, was examined. The examination included discussions with licensee personnel, examination of records, and observations of permanent locked barriers which deny access to unshielded portions of the fuel element transfer tube.

The two exposed individuals, 27 and 17 rems, evidenced no clinical manifestations of exposure either blood or skin. A cytogenic analysis, performed at the Clinical Cytogenics Laboratory of Presbyterian University Hospital, Pittsburg, PA, indicated possible exposure in the range of 30-40 rad for the individual estimated to have received the 27 rem exposure, and at or below the detection limit of 20-25 rad for the individual estimated to have received the 17 rem exposure.

The licensee's detailed engineering evaluation to identify unknown plant conditions with a potential for producing radiation exposures in excess of limits, was not complete. The evaluation, scheduled for completion by January 1, 1979, will be examined during a subsequent inspection.

3. Environmental Protection

The inspector discussed with licensee management the letter report dated April 4, 1978 submitted pursuant to Sections 4.1.1.3.3 and 5.3 of the Environmental Technical Specifications. The report noted that on 12 days during March 1978, a total of 1,611 eulachon (*Thaleichthys pacificus*) (smelt) and 2 prickly sculpin (*Cottus asper*) were collected on the traveling screens. The licensee noted that although the technical specification was somewhat ambiguous, the collection of spent, diseased and dead smelt during the spring spawning run of these fish did not appear to be applicable under the Technical Specification which refers to salmonids. The licensee stated that in future years, smelt impingements would not be reported. The NRR, DOR Project Manager concurred in the licensee's interpretation of the Technical Specification. The licensee was informed of NRR's concurrence.

No items of noncompliance or deviations were identified.

4. Emergency Planning - Coordination with Offsite Agencies

The inspector discussed with licensee personnel and examined records, procedures and letters of agreement relating to coordination with offsite agencies. The inspector interviewed

representatives of Columbia County, Oregon; Cowlitz County, Washington; U. S. Coast Guard and the Rainier Rural Fire Protection District. The inspector verified that the agreements remain in effect and that coordination is adequate to provide effective response in the event of emergencies.

The licensee is currently working on an agreement with Columbia District Hospital to provide local emergency care in stabilizing serious trauma cases before moving the patient to Good Samaritan Hospital in Portland.

No items of noncompliance or deviations were identified.

5. Emergency Planning - Facilities, Equipment and Procedures

The inspector identified and discussed changes in facilities, equipment and procedures which have occurred since the inspection of August 16-19, 1977 (50-344/77-14). These changes included the permanent installation of a decontamination shower at the Visitors Information Center (VIC) which is the location of the Emergency Control Center (ECC). Available equipment has been supplemented by the addition of improved maps and sample containers. The Radiation Protection Field Response Team equipment was placed in a single container at the ECC to facilitate the teams response.

Amendment 7 to the Radiological Emergency Response Plan (RERP), issued May 1978, reduced the communications responsibilities of the Shift Supervisor and changed responsibility for evacuation of the exclusion area from VIC personnel to Security. Changes to the RERP were reviewed for compliance with 10 CFR 50.59 requirements.

Radiation Protection Emergency Response Team (RP-117) procedure has been prepared and implemented. The procedure provides for three response groups, In-Plant, Field and VIC. The procedure defines supervision, membership and actions of each group. The inspector verified that inventories of emergency equipment lockers are performed and that survey instruments supplied to Good Samaritan Hospital are calibrated. Onsite medical equipment consists of first aid and trauma kits and stokes and scoop stretchers at various locations in the plant. Chemical and Radiation Protection technicians (CARP's) are assigned principal first aid responsibility. All CARPs receive multi media first aid training at approximately three year intervals. In addition, CARPs and supervisors receive special trauma training in dealing with massive injuries and stretcher use. All plant personnel receive training and annual retraining in Cardio-Pulmonary Resuscitation (CPR). The licensee's Industrial Relations group provides first

aid training to all plant personnel at regular safety meetings. Full time availability of trained first aid personnel is provided by CARPs that are assigned to all shifts. An examination of records and discussions with licensee personnel established that the training and retraining satisfied the requirements specified in the RERP. The training group provides annual RERP training to all employees having unescorted access. Supervisors provide training of teams having specific RERP responsibilities.

All currently licensed personnel received additional training consisting of a review of the RERP as a part of the operator retraining program. In addition, all licensed personnel, the Radiation Protection Supervisor and Radiation Protection Engineer received training in offsite dose assessment calculations. The training consisted of four dose calculations presented in scenario format for the following cases, (1) liquid release to the Columbia River from the RWST, (2) uncontrolled release of a full gas decay tank, (3) liquid and gaseous release to the atmosphere due to steam generator tube rupture with concurrent reactor coolant pump locked rotor and (4) waste concentrates release to the Columbia River. The trainees performance was evaluated on the basis the time required for the calculation and the results of the calculations. The training group prepared and distributed a Training Information Bulletin to inform personnel of the changes made in the RERP by the inclusion of Amendment 7.

No items of noncompliance or deviations were identified.

6. Emergency Planning - Tests and Drills

The 1978 Annual RERP exercise was conducted on September 20, 1978. The exercise was conducted in two separate parts. The first part consisted of a scenario based on the shattering of the impeller of a CVCS Concentrates Holding Tank Pump with resulting contamination and injury of one worker and contamination of a second worker. In addition, the shattered impeller severed the line from the Waste Gas Decay Tank supplying cover gas to the CVCS Hold Up Tank. The exercise scenario was designed to be of sufficient magnitude to accomplish the following objectives:

- a. Exercise the Radiation Protection Emergency Response Field Team.
- b. Alarm the Oregon State, Department of Energy, Trojan Radiation Monitoring equipment in Salem, Oregon.

- c. Exercise the Columbia Hospital District ambulance and Good Samaritan Hospital.
- d. Test VIC first aid and decontamination capabilities.
- e. Test the revised notification system.
- f. Test the dose assessment and plant staff emergency response.
- g. Test the newly defined emergency response procedure with the U. S. Coast Guard.
- h. Provide the Oregon State Health Division with sufficient data to exercise their new computer capabilities.

Inspectors observed licensee response and actions at the following locations, control room, accident scene, ambulance and hospital and the ECC at the VIC. The inspectors observed the post drill critique attended by selected plant staff personnel and exercise controllers and observers. A number of minor discrepancies were identified during the critique. The licensee stated that the critique would be documented and the results evaluated for possible corrective action. The licensee's response to the exercise was orderly, timely and appeared to be as required by the RERP.

The second portion of the exercise was a test of the notification and response capabilities during off hours. The second portion began at 2300 on September 20, 1978. This exercise included a full test of the notification system with followup calls to all individuals or organizations with emergency response responsibilities to assess their ability and the time required to respond and their actions in the event of a real emergency. A critique was held for all participants of the second exercise on September 22, 1978, at the VIC.

The after hours exercise identified a number of communications problems with various agencies and individuals. The results of the second exercise are to be documented and discussed with involved personnel and agencies in order to correct the identified problems. The inspectors observed the after hours drills in the control room and the post drill critique.

No items of noncompliance or deviations were identified.

#### 7. Radiation Protection - Organization

The Chemical-Radiation Protection organization has been reorganized into a Chemistry group under the Chemistry Supervisor who reports to the Engineering Supervisor. A Plant

Chemist who works closely with the Shift Supervisor on plant problems and system optimization reports to the Chemistry Supervisor. Eight CARPs report to the Chemistry Supervisor. The chemistry CARPs are cross trained in radiation protection. A new training program which specifies the level of cross training was in preparation at the time of the inspection. Two of the eight CARPs are assigned to plant operating shifts and report to the Shift Supervisor for special assignments in addition to their routine chemistry and radiation protection duties.

A Radiation Protection Supervisor, reporting to the Assistant Plant Superintendent, has been designated. Reporting to the Radiation Protection Supervisor are an Assistant Radiation Protection Supervisor, a Radiation Protection Engineer, a Radiation Protection Specialist and a Radiation Protection Records Coordinator. Eight CARPs, cross trained in chemistry report to the Assistant Radiation Protection Supervisor. Two of the CARPs are assigned to plant operating shifts and report to the Shift Supervisor for special assignments in addition to their routine radiation protection and chemistry duties.

The CARPs are not routinely interchanged between the chemistry and radiation protection groups. Prior to assignment to the four operating shifts, the four CARPs are cross trained for two weeks in the other group specialty.

The radiation protection staff includes two individuals new to the radiation protection organization. The Radiation Protection Supervisor, has a B.S. in Chemical Engineering, five years experience in the Naval Reactors Program, two years with Bechtel in the field of offsite dose calculations and implant exposure reduction and one year with the licensee's Radiological Section. He is a Certified Health Physicist and a Registered Professional Engineer (Nuclear) in California. His qualifications appear to satisfy the requirements of Reg. Guide 1.8. The Assistant Radiation Protection Supervisor had eight years experience in the nuclear navy and has been with the licensee for approximately seven years having advanced from Assistant Control Operator to Shift Supervisor.

No items noncompliance or deviations were identified.

8. Radiation Protection - Training

The inspector examined the new training facilities, records and discussed radiation protection training with licensee personnel.

The inspector identified no significant changes in the program from that reported in IE Inspection Reports 50-344/77-24 and 50-344/78-09.

The licensee is currently revising radiation protection training procedures for CARPs as a result of the reorganization of the Chemistry and Radiation Protection groups. Annual radiation protection retraining is conducted in the VIC auditorium. The training sessions are video taped and available for later training of individuals who were unable to attend the regularly scheduled training. The licensee has expanded and improved the training facilities and has upgraded the video tape equipment.

Special training in plant systems is being provided to the sixteen CARPs and six engineers and supervisors. The training consists of weekly sessions which include approximately six hours of lecture, two hours of plant tour and an examination. A total of sixteen topics are addressed, including Standard Technical Specifications, Data Acquisition Procedures and the Radiological Emergency Response Plan, in addition to the various plant systems. At the time of the inspection, the systems training was approximately 50 percent complete.

No items of noncompliance or deviations were identified.

9. Radioactive Waste Systems - Operations

The licensee submitted the Semiannual Radioactive Effluent Release Report required by Technical Specification Appendix B, 5.5.1.b in a timely fashion. The inspector reviewed the report and observed no obvious mistakes, anomalous measurement results, trends or missing data. The report will be reviewed with the licensee during a subsequent inspection.

No items of noncompliance or deviations were identified.

10. Radioactive Waste Systems - Confirmatory Measurements

IE Inspection Report 50-344/78-09 contained a commitment to collect a particulate filter and a gas sample for confirmatory measurement. The licensee reported that due to the continued reactor shutdown no waste gas and air particulate samples were available. A simulated particulate filter sample will be submitted to the licensee for analysis.

No items of noncompliance or deviations were identified.



11. Licensee Action on IE Bulletins and Circulars

The inspector examined licensee records and facilities and interviewed licensee representatives to verify that the required actions or reviews had been performed.

IE Bulletin 78-07, the licensee responded in writing within the specified period. The licensee uses no demand mode air line supplied respirators. The licensee's Radiation Protection Manual was revised (Revision 11, September 15, 1978) to incorporate the revised protection factors and limitations.

IE Bulletin 78-08, the licensee responded in writing within the specified period. The licensee performed a thorough review of shielding design which was reported separately. Positive access control was installed with keys controlled by the Shift Supervisor. Points of access were appropriately posted. A series of special surveys, in the vicinity of the fuel element transfer tube, were performed with a fuel element stopped in the tube at several different locations.

IE Circular 78-03, was received and reviewed by appropriate management personnel in the licensee's organization. The licensee planned no special action in response to the circular and expressed the intent to comply with the requirements of 10 CFR 71.

No items of noncompliance or deviations were identified.

12. Exit Interview

The inspectors met with licensee representatives (denoted in Paragraph 1) at the conclusion of the inspection. The inspectors summarized the purpose and scope of the inspection. The licensee was informed that no items of noncompliance or deviations were identified.