

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

REGION V

Report No. 50-344/80-08
Docket No. 50-344 License No. N F-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: April 8-11, and 16-18, 1980 and May 6-9, 1980

Inspectors: *J. Spencer* 6/26/80
for D. P. Haist Date Signed
J. O. Elin PPM on list 25 JUNE 1980
J. O. Elin Date Signed
W. J. Wagner 25 JUNE 1980
W. J. Wagner Date Signed
Approved By: *J. Spencer* 6/26/80
for R. T. Dodds, Chief, Reactor Engineering Support Section Date Signed

Summary: Inspection on April 8-11, 16-18 and May 6-9, 1980 (Report No. 50-344/80-08)

Areas Inspected: Routine announced inspection by regional based inspectors of inservice inspection activities, maintenance activities related to pressurizer code safety valves, preparations for the control building wall modifications, and activities performed in response to IE Bulletin 79-01B - "Environmental Qualification of Class IE Equipment."

The inspections involved 114 inspector hours onsite by four NRC inspectors.

Results: No items of noncompliance were identified.

DETAILS

1. Individuals Contacted

a. Portland General Electric Company (PGE)

- *C. A. Olmstead - Manager, Technical Services
- *D. F. Kielblock - Manager, Plant Services
- *R. P. Schmitt - Engineering Supervisor
- *D. W. Swan - Maintenance Supervisor
- *C. B. Shaw - Staff Mechanical Engineer
- *J. D. Reid - Quality Assurance Supervisor
- *S. G. Banton - Plant Engineering
- A. O. Wogen - Staff Mechanical Engineer
- +H. Schmidt - Generation, Licensing and Analysis Department
- +S. Christensen - Manager, Generation Engineering
- +D. I. Herborn - Generation, Licensing and Analysis Department
- +S. M. Lippincott
- +C. E. Kemper - Generation Engineering
- +G. A. Zimmerman - Supervisor Licensing
- +H. E. Williams - Generation Engineering - Electrical
- +G. L. Johnson - Generation Engineering
- J. Aldersebaes - Resident Engineer

b. Westinghouse

- K. Becker - Level III NDE
- J. Stepek - Level II - Ultrasonic
- J. Tarby - Inservice Inspection Coordinator

c. Pittsburgh Testing Laboratory

- V. Hight - Consultant - Level III NDE

d. Bechtel Power Corporation

- M. F. Daubenheyer, Field Construction Manager

+Denotes attendance at Management Interview on April 18, 1980.

*Denotes attendance at Management Interview on May 9, 1980.

2. Inservice Inspection

a. Review of Program

The inspector reviewed selected areas of the inservice inspection program for the second forty months of the first ten year inspection interval for conformance with the ASME Code Section XI, 1974 edition including the summer 1975 addenda. Included in the review were descriptions of the areas to be examined, the examination category, the method of inspection, the extent of examination and justification for exceptions to code requirements.

The inspector also reviewed the schedule of examinations to be performed during the 1980 refueling outage for conformance with the forty month program and for licensee approval.

No item of noncompliance or deviations were identified.

b. Review of Quality Assurance Implementing Procedures

The inspector reviewed the following procedures for compliance with licensee commitments and ASME Section XI and Section V requirements.

<u>Procedure Number</u>	<u>Title</u>
OPS-NSD-101 Rev. 5	Preservice and Inservice Inspection Documentation
ISI-8 Rev. 7	Visual Examination Procedure
ISI-11 Rev. 9	Liquid Penetrant Examination Procedure
NSD-ISI-10 Rev. 4	Preservice and Inservice Examination Manual Ultrasonic Equipment Qualification
ISI-205-Rev. 2	Manual Ultrasonic Examination of Full Penetration Circumferential and Longitudinal Butt Welds
ISI-15 Rev. 6	Ultrasonic Examination of Studs, Bolts and Nuts
ISI-71 Rev. 0	Wet Magnetic Particle Inspection Procedure
PET-9-2 Rev. 0	Inspection of Quality Group 3A/3B Components, Systems, Hangers, and Supports

In addition, the inspector reviewed the following procedures applicable to remote mechanized examination of the reactor pressure vessel.

ISI-152	Operation Procedure for the Inservice Inspection of Reactor Vessels Using the Westinghouse Remote Inspection Tool
RV-ISI-01	Reactor Vessel Inspection Program Preparation and Documentation

WMF-95044-P-001	Preparation and Operation of the In-Service Inspection Tool Number 2
WMF-95044-P-001-E1	Reactor Vessel Remotely Operated Inspection Tool In-House Calibration
WMF-95044-P-001-E2	Westinghouse Electronic Block Simulator (EBS) MKI Operating Procedure

The inspector verified that operating procedures and preparations for the remote vessel examinations ensure the required examination coverage and that calibration had been specified in accordance with the ASME Code Section XI.

No items of noncompliance or deviations were identified.

c. Observation of Work and Work Activities

The inspector observed the following selected areas of the remote automated reactor vessel examinations: assembly operations and placement of the tool onto the reactor vessel; preparation for examination including establishment of "home" position; recalibration of each instrumentation system utilizing the data previously stored in the Electronic Block Simulator (EBS); verification of the function of each transducer utilizing the response from the cylindrical cross target; verification of instrument screen height linearity and amplitude control linearity; examination of reactor vessel flange to vessel weld from 133.3 degrees to 183.3 degrees and examination of loop 2 outlet nozzle to safe-end weld at 338 degrees; calibration and sensitivity (transducer) checks at completion of reactor vessel flange examination and position checks at the completion of the vessel flange examination.

Examinations and calibration and position checks were conducted in accordance with the applicable procedures by Level II examiners. No items of noncompliance or deviations were identified.

d. Review of Records

The inspector reviewed records of the following manual examinations conducted during the current refueling outage:

<u>Component</u>	<u>Examination Method</u>
Reactor Vessel Closure Studs and Nuts Nos. 19-36	Volumetric - Ultrasonic (UT) and Surface - Magnetic Particle (MT)
Reactor Vessel Closure Studs and Nuts Nos. 1-18	Surface (MT)

Reactor Vessel Closure Washers Nos. 19-36	Visual
Pressurizer Shell Weld Nos. 1-9, N1, N3 and N7	Volumetric (UT)
Pressurizer Skirt Weld No. 10	Volumetric (UT)
Pressurizer Manway Bolting Bolt Nos. 6-10	Visual
Steam Generator No. 1 - Channel Heat to Tube Sheet Weld Nos. 1-1, 2-1, 3-1 and 4-1	Volumetric (UT)
Steam Generator Nos. 1-4, Hot Leg and Cold Leg bolt nos. 6-10	Visual
Reactor Vessel Closure Head Peel Segment Meridional Weld Nos. 1-7	Volumetric (UT)
Reactor Coolant System Loop 2 weld nos. 3, 6 and 9	Volumetric (UT)
Reactor Coolant System Loop 4, Weld Nos. 4 and 10	Volumetric (UT)
Loop 1 SIS High Head Injection Weld Nos. 7 and 8	Volumetric (UT)
Loop 3 Main Steam Welds Nos. 19, 21 and 27	Volumetric (UT)

The records reflect conformance with the applicable examination procedure and the examination program plan. Examinations were conducted by qualified and certified Level I and Level II examination personnel.

No items of noncompliance or deviations were identified.

3. Onsite Review of Environmental Qualification of Class 1E Equipment

The inspector examined the licensee's activities in the areas of environmental qualification of class 1E equipment as required by IEB 79-01B of January 14, 1980.

One system of the approximately 20 identified by the licensee in the 45 day response of March 7, 1980, was selected for detailed examination to insure a complete listing of components on the "master list" and to verify correct component identification. The system selected for this review was the "Safety Injection System" (SIS). This system is detailed in the licensee's 45 day response of March 7, 1980, on pages 7, 8, and 9 of the "Master List" (enclosure 1). Specific component evaluation worksheets for components within this system are provided on pages 143 through 204 inclusive of enclosure 2 of the licensee's response of March 7, 1980.

The safety injection system, as detailed in the licensee's "master list" submittal, consists of 69 components, 40 of which are located inside containment. Containment penetrations, electrical cable, etc. are specified under separate listing as generic components, common to many systems.

The components inside containment were examined by the inspector for proper manufacturer and model number identification. Component location and installation details were noted to identify possible inconsistencies with qualification documentation.

It was noted that several components listed as Namco model EA-180 limit switches were in fact Namco model EA-170. The licensee stated that these switches will generally be replaced during the present outage with EA-180s as listed. The licensee also stated that some switches were erroneously listed. The licensee is conducting surveys of installed equipment to verify the master listing. This item will be reviewed on future inspections to insure complete identification and qualification of limit switches. (50-344/80-08/01)

The inspector could not verify the model numbers given in the master list for Asco solenoid valves. The valves had been listed as model LB831654 and NP831654E. These numbers did not appear on the solenoid valves. Additionally, several solenoid valve actuators were located below the submergence level of the containment building while the master list stated that they were located with the valve it activates, which is above the containment submergence level. The licensee intends to include this item in the scope of the surveys of installed equipment being performed during the outage to verify the master listing. The necessary corrections to the master list will be provided with the 90 day submittal of the response to IEB 79-01B. The inspector will review this item during future inspections. (50-344/80-08/02)

The safety injection system components outside containment as detailed in the licensee's master list of March 7, 1980 were examined for proper model number and manufacturer listing. The inspector identified problems with Namco limit switches and solenoid valves similar to those inside containment. The safety injection pump motors appeared to be of a model number other than the Westinghouse type listed. Also, several pressure and flow transmitters did not have manufacturer or model number information provided on the master list. The licensee was conducting verification surveys to correct these deficiencies in the master list.

The inspector also compared the master list against the piping and instrumentation diagrams for the system reviewed. It was noted that air operated valves were not included in the IEB 79-01B review, although electric solenoid valves controlling the process valve were included. The licensee considered process valve air operators as mechanical components and not class 1E components within the scope of IEB 79-01B.

No items of noncompliance or deviation were identified in the review of IEB 79-01B activities. Further examination of these activities will be made after the licensee submittal of the required 90 day response.

4. Control Building Modifications

The control building walls are currently planned to be modified as described in PGE-1020 "Report on Design Modifications for the Trojan Control Building" Revision 4 of 13 February 1980.

The inspector examined the status of preparations for the wall modifications in regards to tentative schedule, drawings and procedure status. The inspector examined the areas to be modified in the control building and turbine building.

No items of noncompliance or deviations were identified.

5. Pressurizer Code Safety Valve Maintenance

a. The inspector examined the following procedures related to pressurizer code safety valve maintenance for compliance to the ASME B&PV Code 1974 Edition and ASME PTC 25.3-76.

- 1) Maintenance Procedure, MP-5-1, Pressurizer Safety Valve Tests, Revision 3 of May 21, 1979.
- 2) Crosby Valve and Gage Company Installation Operating and Maintenance Instruction for Crosby Style HB and HB-SP Self-Actuated Nozzle Type Safety Relief Valves, Instruction No. I-1105-2.
- 3) Quality Assurance Procedure, QAP-10-1, Inspection Control, Rev. 3 of 04/23/80.
- 4) Quality Assurance Procedure, QAP-10-2, Qualification of QC Inspection Personnel, Revision 1 of December 8, 1979.
- 5) Administrative Order, AO-3-9, Maintenance Requests, Revision 5 of February 15, 1980.

b. The inspector had the following comments on the procedures.

- 1) Procedure MP-5-1 par. 3f. allows averaging the results of two set pressure tests to determine an acceptable setting. The procedure does not limit the spread between the two results used to obtain an average. The procedure requires the average value to be between 2460 psig and 2510 psig but does not preclude either of the two values used to obtain the average value from being outside the 2460 to 2510 range.

The licensee's Quality Assurance Program par. 5.3 states in part the procedures will include appropriate quantitative acceptance criteria.

- 2) Procedure MP-5-1 Section III B for bench testing the valve does not address the temperature or temperature compensation for the valve setting. PTC-25.3-1976 Par. 0.01 states that if the temperature of the medium used to test the valve differs substantially from the temperature to which the valve is subjected while in service it is necessary to develop appropriate corrections for the valve under test. Licensee personnel stated the bench testing option had not been used to date.
- 3) Procedure MP-5-1 Section III C provides instructions for lapping the disc insert. The procedure does not provide disassembly instructions, nor does it require set pressure testing after maintenance. However, the manufacturer's installation, operating and maintenance instruction manual is a reference document and does contain detailed maintenance instructions.

The procedure general requirements par. II A 4 states that the valves are "Q-listed" items and that work shall be performed in accordance with approved procedures.

In addition ASME XI 1974 par. IWV 3200 states in part that after a valve has undergone maintenance that could affect its performance it shall be tested to demonstrate that the performance parameters are within acceptable limits. The code further states that removal of the bonnet is an example of maintenance that could affect valve performance parameters.

- 4) The procedure MP-5-1 requires quality control verification of removal of test gear in par. III.A.3.g and Flange gasket removal in par. III B.2.4. However, other items more critical to satisfactory valve performance such as set pressure adjustment and nozzle ring settings (for blowdown) are not required to be verified by independent quality control personnel.

At the exit interview licensee management committed to review the inspectors findings after they were received in writing and to take corrective actions as appropriate at that time.

Therefore items 4b 1) 2) 3) and 4) above are considered unresolved.
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Note: Item 4b 4) was considered unresolved at the time of inspection. Subsequent investigation by the resident inspector regarding the qualification of the mechanics performing the safety valve testing resulted in an item of noncompliance which is presented in IE Inspection Report 50-344/80-11.

- c. The inspector examined pressurizer code safety valves PSV 8010 A B & C as installed on the pressurizer. The inspector verified that the valve bonnet plugs were not installed, that is, that the bonnet was properly vented.

No items of noncompliance or deviations were observed.

- d. The inspector examined the maintenance records for valves PSV 8010 A B & C from startup testing in September 1975 to date. The following items were observed:

- 1) Valve PSV 8010A, Maintenance Request 3615 of 2/22/76 shows that the valve was disassembled, the valve seat lapped and the valve reassembled. No set point test was performed. This is in apparent conflict with ASME B&PV Code 1974 Edition Section XI par. IWV 3200 which states, in part, that after a valve has undergone maintenance that could affect its performance, it shall be tested as necessary to demonstrate that performance parameters are within acceptable limits. Licensee personnel stated that the valve vendor's procedure indicates disassembly, seat lapping and reassembly will not affect valve performance.

This item is considered unresolved pending detail review of the vendor procedure and licensee's controls to ensure code requirements have been met. (Item 50-344/80-08/04)

- 2) Valve PSV 8010A, Maintenance request 77-1576 of 6/9/77 shows that to correct an apparent seat leak a lift test was performed on the valve. The lift pressure is recorded as 2515 psig whereas the maximum allowable lift pressure is 2510 psig. The maintenance supervisor at that time indicated on the maintenance request record that the test was not an official lift test.

Licensee management personnel at the exit interview committed to review this item after this inspection report is received.

This item will be inspected further on a future inspection.
(Item 50-344/80-03/05)

- 3) Valve PSV 8010A, Maintenance Request 79-0911 of February 22, 1979.

The inspector observed that the lift test of the valve was not verified by a quality control inspector, nor is this required by the licensee's procedures. It was noted that test data sheets for 1977 did require QC verification of lift setpoint. Additionally one of the two lift test results was 2451 psig which is below the minimum of 2460 psig. These two items are addressed in the procedure review comments in paragraphs 4 b 1) and 4 b 4) above.

- 4) PSV 8010 B Maintenance Request 78-0129 of 3-19-78 states that the valve was tested and found to be out of specification. It further states the valve was adjusted, tested two times, and averaged to be in specification. No values are recorded and a note explains that the original documentation was lost. No additional values were tested.

The ASME B&PV code 1974 Edition Section XI Par. IWV-3510 provided for periodic testing of safety valve set points and states if any valve in a system fails to function properly during a regular test additional valves in the system shall be tested. The paragraph goes on to provide a formula determining the number of additional valves to be tested.

The licensee had tested a sufficient number of valves in previous years to meet the formula without testing additional valves. The licensee met the formula but may not have met the apparent intent of code to test additional valves.

At the exit interview licensee management committed to evaluate this item after this report is received. This item will be inspected further on a future inspection. (Item 50-344/80-09/06)

- 5) Valve PSV 8010C Maintenance Request 77-0833 of 5/2/77.

The lift test data sheet attached to the maintenance record is filled in with the data from one lift but is not signed. The spaces on the form for the signature of the QC inspector, maintenance supervisor and engineering supervisor are not signed or dated.

Since subsequent data sheets for the tests of other valves tested after this test were properly completed this appears to be an isolated case. The inspector had no further questions.

6. 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 identified during the inspection are discussed in Paragraphs 4b. and 4d. above.

7. Exit Interviews

At the conclusion of the IEB 79-01B inspection on April 18, 1980, the inspector met with licensee representatives (denoted in paragraph 1). The scope and findings of the inspection as noted in this report were discussed. At the conclusion of the remainder of the inspection on May 9, 1980 the inspectors met with licensee representatives (denoted in paragraph 1). The scope of that portion of the inspection and the findings were discussed.