



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
PORTLAND GENERAL ELECTRIC COMPANY  
TROJAN NUCLEAR PLANT  
DOCKET NO. 50-344  
GENERIC IMPLICATIONS OF SALEM ATWS EVENT  
GENERIC LETTER 83-28, ITEM 4.5.1

I. INTRODUCTION

On February 25, 1983, during startup of the Salem Unit 1 plant, both circuit breakers in the Reactor Trip System failed to open automatically upon receipt of a valid trip signal. As a result of that event, the NRC's Office of Inspection and Enforcement issued IE Bulletin 83-01 which described the event and requested specified prompt corrective and preventive actions by licensees. As the cause and ramifications of the event were more clearly developed, the NRC's Office of Nuclear Reactor Regulation issued on July 8, 1983, Generic Letter 83-28, "Required Actions Based on Generic Implications of Salem ATWS Events." This letter addressed issues related to reactor trip system reliability and general management capability. The letter was sent to all licensees of operating reactors, applicants for operating licenses and holders of construction permits.

One of the areas of reactor trip system reliability considered in Generic Letter 83-28 (GL 83-28) is that of system functional testing. This is identified in GL 83-28 as Item 4.5.1. This evaluation considers the acceptability of the response to this item provided by the Portland General Electric Company (the licensee) for the Trojan Nuclear Plant (the facility).

II. EVALUATION

Item 4.5.1 of GL 83-28 states as follows:

"On-line functional testing of the reactor trip system, including independent testing of the diverse trip features, shall be performed on all plants.

"1. The diverse trip features to be tested include the breaker undervoltage and shunt trip features on Westinghouse...plants."

In addition, Item 4.5.1 states that licensees and applicants should submit a statement confirming that this action has been completed.

By letter dated November 4, 1983, the licensee responded to a number of GL 83-28 items, including Item 4.5.1. Regarding Item 4.5.1, the licensee stated a Westinghouse Owners Group (WOG) generic design for a reactor trip breaker shunt trip had been submitted to the staff on June 14, 1983. The licensee noted this design includes provisions for on-line surveillance testing of the undervoltage (UV) and automatic shunt trips, and stated they had committed (in response to Item 4.3) to install this design. The proposed design modifications were found acceptable by the staff by letters dated July 26, 1984 and June 30, 1985. While noting that in the absence of this modification it is only possible to perform on-line testing of the UV trip mechanism, the licensee's response to Item 4.5.2 states that, when the reactor trip breaker shunt trip design is completed, on-line testing of both the UV and shunt trip devices will be possible. In addition, in paragraph 4 of the Attachment to the licensee's letter of March 30, 1984, the licensee states:

"Independent operability testing of the UV and shunt trip devices in response to an automatic trip signal will be incorporated into Periodic Instrument and Control Test PICT-10-1, Reactor Protection System surveillance test following completion of the shunt trip modification."

Finally, the response to Item 4.5.2 in the licensee's letter of November 4, 1983, states that on-line testing of the reactor trip breakers is conducted on a monthly basis while performing PICT-10-1.

### III. CONCLUSION

Based on the licensee's commitment to modify the reactor trip breakers to allow automatic actuation and independent on-line testing of the shunt trip mechanism and the commitment to include such testing in the procedure used for monthly testing of the Reactor Protection System, the staff concludes the licensee has satisfactorily completed the actions required by Item 4.5.1 of Generic Letter 83-28. Accordingly, this item is closed.

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