



Portland General Electric Company
Trojan Nuclear Plant
P.O. Box 439
Rainier, Oregon 97048
(503) 556-3713

January 29, 1981
CPY-090-81

Mr. R. H. Engelken, Director
Nuclear Regulatory Commission, Region V
1990 North California Blvd.
Walnut Creek, California 94596

Dear Sir:

In accordance with the Trojan Plant Operating License, Appendix A, US NRC Technical Specifications, Paragraph 6.9.1.7, attached is Licensee Event Report No. 80-29, concerning a situation where the isolation valves between the Refueling Water Storage Tank and the Spent Fuel Pool Purification System were originally installed in a manner that could prevent their automatic operation.

Sincerely,

C. P. Yundt
General Manager

CPY
CPY/RPS:na
Attachments

c: LER Distribution List

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REPORTABLE OCCURRENCE

1. Report No.: 80-29
2. a. Report Date: January 29, 1981
b. Occurrence Date: December 31, 1980
3. Facility: Trojan Nuclear Plant, PO Box 439, Rainier, Oregon 97048
4. Identification of Occurrence:

During the performance of routine surveillance testing, control valve CV-5075 failed to close. This valve connects the Refueling Water Storage Tank (RWST) with the Spent Fuel Purification System to permit purification of the RWST. The valve serves as a boundary between Seismic I and Seismic II portions of the system and closes upon receipt of a safety injection signal. The failure of this valve to close during a seismic event and a safety injection could cause an unacceptable loss of water from the RWST.

5. Conditions Prior to Occurrence:

The plant was in Mode 1 at 100% power at the time this problem was identified.

6. Description of Occurrence:

The RWST is connected to the Spent Fuel Pool Purification System to permit purification of the RWST. Isolation valves CV-5075 and -5076 serve as the boundary between the seismically-qualified RWST and the Seismic II piping associated with the purification system. The valves automatically shut upon receipt of a safety injection signal. During routine surveillance testing, it was discovered the CV-5075 failed to close upon receipt of a simulated safety injection signal. An investigation of this problem revealed that the solenoid in the control air system was not consistent with the electrical system design and as a result, failed to operate properly. This problem was common to both valves and could cause either or both valves to fail to shut when required.

A review of the consequences of this potential failure was made and it was determined that under a specific set of conditions, unacceptable losses of RWST inventory could occur. During a seismic event, the nonqualified piping in the purification system could fail. If the RWST was being purified at this time, water from the RWST could be pumped from the break at a rate of 250 gallons per minute by the purification system pump. If the seismic event also caused a loss of coolant accident, the resulting safety injection signal would be expected to shut CV-5075 and -5076. If these valves failed to shut, the water loss from the RWST would continue. If no further action were taken, an unacceptable loss of RWST inventory could occur.

7. Designation of Apparent Cause of Occurrence:

The apparent cause of this event is attributed to construction/installation errors. The control power to the solenoids comes from a DC power source, however, design drawings call for an AC solenoid to be installed. Personnel during construction apparently noted this discrepancy and attempted to rectify it by installing the AC solenoid with a DC coil and slug. Neither the problem nor the modification were documented. Although this combination of parts was functional, the size of the slug and other electrical characteristics were not correct and eventually resulted in a failure of the valve to close.

8. Analysis of Occurrence:

This event had no effect on either plant or public safety. The failure was found to occur only intermittently and is unlikely that both valves would fail simultaneously. The probability of the combination of events required to cause a significant loss of RWST water occurring is small and the valve could be shut manually if required.

9. Corrective Action:

The valves were closed and tagged in order that they would not be opened until the problem was corrected. A design change is being implemented to install the correct solenoids in the control air system.