

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE--PNO-I-84-83a

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region I staff on this date.

Facility: Pennsylvania Power & Light Co.	Licensee Emergency Classification:
Susquehanna Steam Electric Station	<input type="checkbox"/> Notification of Unusual Event
Units 1&2	<input type="checkbox"/> Alert
Berwick, PA	<input type="checkbox"/> Site Area Emergency
	<input type="checkbox"/> General Emergency
	<input checked="" type="checkbox"/> Not Applicable

Subject: SCRAM PILOT SOLENOID VALVE FAILURES - UPDATE

A meeting was held at NRC Bethesda, MD offices with representatives of General Electric and PP&L to discuss the discovery of a defect in the design of T-ASCO solenoid-operated scram pilot valve assemblies used in the control rod drive hydraulic control system at Susquehanna. The defect involved the use of a polyurethane material for the disc which, apparently when subjected to temperatures above approximately 150°F, becomes adhesive and causes the valve stem to stick to the seat. This is the cause attributed to the failure of four control rods to scram, and eleven others to hesitate, during surveillance testing on October 6, 1984 for Unit 1.

The Viton-A product improvement was made by ASCO/GE sometime in May-June 1982, for improved environmental qualification features - this material has better temperature (up to 400°F) and hardness-resistant properties than the polyurethane. BWR plants, which have not yet loaded fuel and currently use polyurethane in T-ASCO applications in the control rod system, include: Hope Creek, Nine Mile Point 2, Grand Gulf 2, Perry, Clinton and River Bend 1. An overseas site, Kuosheng 1 & 2 in Taiwan, has been in operation since 1981-82 with T-ASCO polyurethane seals. GE issued a Service Information Letter (SIL) on October 16, 1984, which (1) describes this problem, (2) recommends replacement of T-ASCO seals with repair kits containing the Viton-A, and (3) suggests verification of this application by all plants. A Part 21 Report is expected to be prepared by GE for issuance, in the next week or so. GE has stated that the T-ASCO solenoid valves are unique to BWR control rod systems. The T-ASCO was an improvement made (from dual-ASCO valves) in the 1970's for faster, more reliable, scram response.

NRC Region I has issued a Confirmatory Action Letter on October 17, 1984 which documents PP&L's intent to:

- scram-time test all 185 rods, on each unit, when a 50-60% power level is reached
- develop a surveillance procedure to unambiguously assess scram pilot valve operability, to be submitted to and approved by NRC prior to implementation, and performed every 4 to 6 weeks
- trend and report immediately to NRC, via the ENS network, any failures or anomalies found during scram solenoid valve operability tests, or individual control rod scram time testing (normally performed for a 10% rod sample every 6 months)
- provide the failure analysis results from Franklin Research Center and General Electric testing underway on the original T-ASCO valves which failed

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The Susquehanna resident inspectors are reviewing two-years of scram data and maintenance records for the T-ASCO valves. Two instances of similar failures, occurring during April 1984 Unit 2 startup testing, have been identified. Unit 1 is currently at 5% power and ascending; a February 1985 refueling outage is planned. Unit 2 is currently in Cold Shutdown, with startup expected to commence on October 18, 1984; a pre-commercial outage is scheduled to begin at the end of this month. The Commonwealth of Pennsylvania has been informed.

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