



Duquesne Light

Nuclear Division
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May 25, 1984
ND1SS1:2087

Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Special Report

Dr. Thomas E. Murley
Regional Administrator
United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

Dear Dr. Murley:

In accordance with Appendix A, Beaver Valley Technical Specification, 3.7.14.1, Fire Suppression Water System, the following Special Report is submitted. This report is required when the conditions specified in Technical Specification 3.7.14.1.a are not satisfied.

On April 29, 1984, during the performance of a normally scheduled surveillance test on the Diesel Engine Driven Fire Pump [FP-P-2], the pump failed to successfully complete the surveillance test. The fire pump was then declared inoperable. Technical Specification 3.7.14.1 requires that the Fire Suppression Water System be operable with two high pressure pumps at all times. This is non-conservative with respect to Technical Specification 3.7.14.1 and reportable per Technical Specification 6.9.2(4).

After the fire pump was started, the pump ran for four (4) minutes and then tripped. The Auto-Start indicating light on the local control panel burst, and smoke was observed emanating from the top of the local control panel. Electrical Maintenance was called in to troubleshoot and repair the fire pump. During this investigation, the following components were found to be faulty and were replaced: the voltage regulator, the generator and the Auto-Start indicating lamp socket. During the troubleshooting and repair process, the Crank Cutoff Relay flashed, caused a short circuit, and incinerated. The fuel shutoff valve assembly was also found to be operating improperly. The Crank Cutoff Relay and the fuel shutoff valve assembly were also replaced.

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The root cause for this incident is unknown. The following causes are postulated, but in each case no substantial evidence could be found to support each supposition:

- (1) faulty voltage regulator,
- (2) faulty generator,
- (3) an incorrect polarity condition existed between the generator and the battery which may have caused the generator or the voltage regulator to fail.

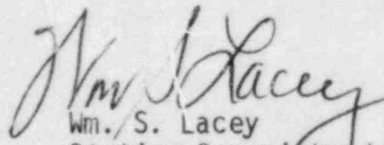
It should be noted that any one of the above-mentioned conditions could have caused one or the other two conditions.

Immediate corrective actions taken were to replace the fuel shutoff valve assembly, the voltage regulator, the generator, the indicating lamp bulb and socket, and the Crank Cutoff Relay. This polarity condition is believed to be caused by opening of the battery disconnect circuit breakers prior to a fire pump run when the engine is put on clearance for testing of maintenance. To preclude this condition from occurring, caution signs, alerting personnel of the possible dangers incurred when the battery disconnect switches are opened, will be placed on the local control panel next to the disconnect switches. Voltage regulator polarization instructions have been reviewed by the electrical maintenance group.

There were no safety implications to the public because the motor driven fire pump was operable at all times and a temporary portable fire pump was available if required.

There have been six previous licensee event reports issued on FP-P-2 (LERs: Special Report in 1978, LER 80-030/01T, LER 80-052/01T, LER 80-059/01T, LER 80-069/01T, and LER 83-010/99X). This is the first LER issued for this type of failure.

The fire pump is a vertical turbine type fire pump manufacturer by Peerless Pumps with a Cummins diesel engine.


Wm. S. Lacey
Station Superintendent

WSL/md

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