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Public Service Electric and Gas Company 80 Park Place Newark, N.J. 07101 201/430-8316

May 18, 1984

Dr. Thomas E. Murley, Administrator  
U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Dr. Murley:

POTENTIAL CONSTRUCTION DEFICIENCY  
DIFFERENTIAL PRESSURE SWITCHES  
HOPE CREEK GENERATING STATION

On April 19, 1984, a verbal report was made to Region I, Office of Inspection and Enforcement representative, Mr. J. Linville, advising of a potentially significant construction deficiency concerning differential pressure switches installed on our Emergency Diesel Generators by Colt Industries. The following interim report is provided in accordance with 10CFR50.55(e).

During factory testing of the first LILCO Colt-Pielstick PC-2 Diesel Generator Set for the Long Island Lighting Company Shoreham Nuclear Plant, two fuel oil filter differential pressure switches failed, permitting fuel oil to escape through the electrical conduit onto the shop floor. The details of the incident are as follows:

1. The differential pressure switch is installed in the fuel oil system and senses fuel pressure before and after the fuel filter.
2. The switch is identified as a United Electric Controls Company (Watertown, Mass.) Stock No. J27KB, Model No. 232.

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3. On March 17, 1984, while the engine was running, fuel was noted running from electrical conduit fittings. Investigation revealed it to be originating from the electrical enclosure box of the above switch. The switch was then removed and replaced. There was a total of 11.8 hours on the engine.
4. The investigation determined that there was a pin hole in the pressure sensing bellows on the low pressure, or engine, side of the switch. It was considered to be an isolated incident because no other failures of this switch were known. The switch was replaced and no further investigation was conducted.
5. On March 25, 1984, with only 12.8 running hours on the new switch, it too failed, allowing fuel to spill from the conduit onto the floor. Examination showed that the low pressure bellows had failed.

Colt concluded that the probable cause is related to pressure pulsation on the low pressure, or engine, side of this switch. Accordingly, the shop was directed to put pressure pulsation dampers on both the high and low pressure sides of this switch. Further shop testing will be performed to determine whether the pulsation dampers eliminate failure of the bellows.

Bechtel, our Architect/Engineer and Constructor, is coordinating with Colt Industries to determine the appropriate corrective action and to evaluate the impact, if any, on the safe operation of the plant. A final report, including an analysis of safety implications, will be provided to your office by July 1, 1984.

Very truly yours,



C Office of Inspection and Enforcement  
Division of Reactor Construction Inspection  
Washington, D. C. 20555

Dr. T. E. Murley

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