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

August 16, 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:

SIGNIFICANT CONSTRUCTION DEFICIENCY  
DEFECTIVE CAPSTAN SPRINGS IN SHOCK ARRESTORS  
HOPE CREEK GENERATING STATION

On October 24, 1983, a verbal report was made to Region I, Office of Inspection and Enforcement representative, Mr. E. M. Kelly, advising of a potentially significant construction deficiency concerning defective capstan springs in mechanical shock arrestors supplied by ITT Grinnell. Interim reports were sent to your office on November 23, 1983, February 29, May 4, and July 25, 1984. The following final report is provided in accordance with 10CFR50.55(e).

Description of the Deficiency

ITT Grinnell advised our Architect/Engineer and Constructor, Bechtel, of a potential problem with defective capstan springs in sizes 1 and 3 mechanical shock arrestors supplied by Pacific Scientific, a sub-supplier of ITT Grinnell. Several PSA-1 mechanical shock arrestors under test at Union Electric Callaway Station revealed broken capstan spring tangs. Metalurgical testing indicates that stresses induced during spring forming resulted in hydrogen cracking during subsequent silver plating. Based on information supplied by ITT Grinnell, Bechtel identified eighty-seven (87) suspect arrestors supplied to Hope Creek.

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Corrective Action Taken

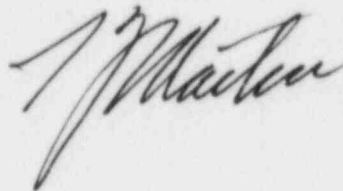
Eighty-six (86) mechanical shock arrestors were returned to Pacific Scientific for inspection and rework, as required. Pacific Scientific replaced the capstan springs in twenty-five (25) shock arrestors. All of the mechanical shock arrestors have been returned to the Hope Creek site. The one shock arrestor identified as missing has been added to the checklist to be used during N-5 data package review. This administrative control will ensure that it is not inadvertently installed in any ASME Section III system.

Safety Analysis

The twenty-five (25) affected shock arrestors were included in, but not limited to, essential safety related and Nuclear Class 1 piping systems. Failure of the shock arrestor to perform properly could lead to piping overstress, equipment nozzle overload and load increases on pipe supports. Since these conditions could adversely affect safe shutdown of the plant, the defective capstan springs are considered to be a reportable deficiency in accordance with 10CFR50.55(e).

Completion of corrective action was documented on Nonconformance Report No. 2701 on August 3, 1984.

Very truly yours,



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Division of Reactor Construction Inspection  
Washington, D. C. 20555

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