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Electric and Gas  
Company

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November 21, 1985

50-354

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  
RUSKIN FIRE DAMPERS - MODEL NIBD-23  
HOPE CREEK GENERATING STATION

On December 24, 1984, a verbal report was made to Region I, Office of Inspection and Enforcement representative, Mr. H. Kister, advising of a significant construction deficiency concerning the performance of spring closure fire dampers supplied by Ruskin Manufacturing Company. On January 25, April 1, July 23 and October 2, 1985, interim reports were sent to your office. The following final report is provided in accordance with 10CFR50.55(e).

Description of Deficiency

Ruskin Manufacturing Company issued a 10CFR21 Report concerning the failure and/or reduced performance of spring closure fire dampers which require closure under air flow conditions. Ruskin reported that the test methods originally used to test dampers may not accurately reflect actual field installed conditions. Our Architect/Engineer and Constructor, Bechtel has evaluated all 692 fire dampers for applicability of the subject concern. These dampers were purchased variously as Q (for seismic considerations), non-Q or F listed. The evaluation identified 81 dampers requiring modification. Specific system/damper solutions have been developed based on vendor supplied and in-place test results.

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Safety Analysis

Dampers 1GKD342, 343 and 345 were supplied by Ruskin and are installed in a three hour fire barrier at elevation 155' of the Hope Creek Diesel Generator/Control Building. This barrier separates redundant Control Building HVAC units 1AVH403/400 and 1BVH403/400. These dampers are required to close under air flow conditions.

Had the reported condition gone undetected and uncorrected, failure of these dampers to close in the event of an unsuppressed fire in that location could adversely affect the Control Room HVAC units on both trains, thereby interrupting Control Room ventilation. Since the Control Room HVAC units are required for safe operation of the plant, we consider the deficient condition to be reportable in accordance with 10CFR50.55(e).

Corrective Action

Your letter dated July 12, 1985, transmitting Inspection Report No. 85-24, directs that the nine (9) licensing related issues contained therein be resolved directly with your Office of Nuclear Reactor Regulation (NRR). Unresolved item No. 85-24-08 from that report specifically addresses Ruskin fire damper closure under air flow conditions. Accordingly, a complete description of our Ruskin Fire Damper Qualification Program and corresponding FSAR change will be submitted to NRR by December 2, 1985.

The below summary description of our corrective actions is provided in accordance with 10CFR50.55(e).

Our review of the Ruskin damper issue was extensive and involved multiple aspects of potential corrective actions. The review included consideration of alternate dampers, damper modifications, replacement springs and latches, HVAC airflow modifications, administrative controls, fire area boundary redefinition, fire rated ductwork wraps, in-place testing programs, additional Ruskin testing programs, the use of coordinated electro-thermal link (ETL) closures on multi-section dampers, independent alarm systems, and automatic HVAC system shutdown. Each individual damper was evaluated against the design airflows, taking all acceptance testing performed by Ruskin into account. The particular solution chosen for each damper reflects the most appropriate resolution while considering the varying designs and operational parameters in each case.

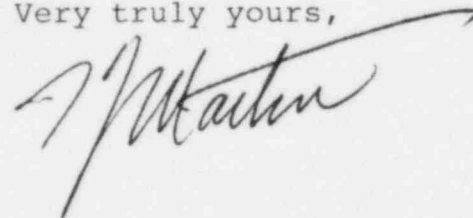
The 81 Ruskin dampers were reworked with stronger listed springs, modified latch mechanism, and electro-thermal link closure coordination (for multi-section dampers). Following this modification work, PSE&G implemented an in-place testing program to identify limiting airflow conditions for specific damper applications. Dampers were grouped according to airflow and size, with the worst-case damper in each group tested in-place under design airflow conditions.

Summary of damper resolution:

456	Acceptable as is.
37	Accepted based on in-place testing after spring and latch changes and ETL closure coordination.
104	Automatic HVAC shutdown.
56	Radwaste and Turbine Building Dampers.
22	Fire area redefinition and non-fire barrier dampers.
4	Duct wrap/3 hour barrier (variation of fire area redefinition).
<u>6</u>	Exemption Request (Unit 2 abandoned/no combustibles)
692	Total

Additional explanatory details for the above categories will be included in our December 2, 1985, submittal to NRR.

Very truly yours,



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Division of Reactor Construction Inspection  
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