



SEABROOK STATION  
Engineering Office

Public Service of New Hampshire

New Hampshire Yankee Division

January 7, 1986

SBN- 921

T.F. Q2.2.2

United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

Attention: Mr. Richard W. Starostecki, Director  
Division of Project and Resident Programs

References: (a) Construction Permits CPPR-135 and CPPR-136, Docket  
Nos. 50-443 and 50-444  
(b) Telecon of December 6, 1985, D. M. Pepe and D. E. Groves  
(YAEC) to Robert Gallo (NRC Region I)

Subject: Interim 10CFR50.55(e) Report: Failure of Fire Damper to Close  
Under Design Airflow Conditions (CDR 85-00-20)

Dear Sir:

On December 6, 1985, we reported a potential 10CFR50.55(e) item to  
Region I [Reference (b)]. The following information is being filed pursuant  
to the interim reporting provision of 10CFR50.55(e)(3).

A. Description of Deficiency

The standard for testing and qualification of fire dampers, UL 555,  
does not require testing of the fire dampers under airflow  
conditions. However, since some utilities have had experience with  
fire dampers failing to close under dynamic flow conditions, we  
tested 13 of our 90 fire dampers required for Appendix R of  
10CFR50. Of the 13 tested under design flow conditions, 11 failed  
to fully close. Upon shutdown of the airflow, some still remained  
partially open and would not close without assistance.

B. Analysis of Safety Implications

Failure of the fire dampers to close under HVAC system flow  
conditions violates the integrity of the fire barriers which could  
prevent safe shutdown of the plant due to a fire.

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C. Corrective Action

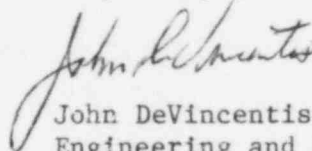
It was determined that the fire dampers failed to close due to insufficient "pulling forces" of the damper closure springs. As the fire damper partially closes, the HVAC System differential pressure at the fire damper location increases the friction between the damper blades and the fire damper's guide tracks.

Calculations are being performed to determine which fire dampers would fail under dynamic flow condition and a test program is underway to verify the calculations and damper closure under operating airflow conditions.

For those fire dampers required for Appendix R of 10CFR50 which failed under test or have been identified by calculation, a modification of stronger closure spring (if possible) and/or a dry lubricate spray coating of the damper guide tracks to reduce friction is being tested. Various dry lubricates are being reviewed for durability, reduction of friction, etc., and will be tested on dampers.

It is expected the above actions will be completed by February 28, 1986, at which time we will file an additional report.

Very truly yours,



John DeVinentis, Director  
Engineering and Licensing

cc: Atomic Safety and Licensing Board Service List

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