VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

June 9, 1980

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Serial No. 1160B
NO/RWC:ms
Docket No. 50-338
50-339

Dear Mr. O'Reilly:

On October 31, 1979 a report was made under the provisions of 10 CFR 50.55(e) concerning the Safeguards Area Exhaust System, North Anna Power Station, Unit 2. Pursuant to North Anna Station Technical Specifications, the Virginia Electric and Power Company also submitted License Event Report No. LER-79-149/01T-0 dated November 15, 1979. The report indicated that the Safeguards Area Exhaust System which provides post LOCA ambient cooling for the Recirculation Spray and Low Head Safety Injection Pumps is not entirely seismically designed as stated in the Final Safety Analysis Report Section 9.4.6.1.

Our follow up letters dated November 30, and December 28, 1979 indicated that further evaluation showed the system design basis is not in conflict with the system description or design criteria as stated in the FSAR. However, we stated we were continuing our review to determine if modifications are required to ensure that the Safeguards and Central Area Exhaust systems will perform their intended functions.

The exhaust ductwork from the Safeguard Area ventilation fans and other fans ventilating potentially contaminated areas up to and including the ventilation stacks was not designed to Seismic Category I requirements, since it was assumed that a postulated failure of the fan discharge ductwork would result in a break in the exhaust ductwork rather than a crimp or full closure of the exhaust path. Under the assumed failure mechanism, the Ventilation System would still perform its required function of providing adequate cooling of Engineered Safeguards equipment. Further evaluation of this design basis indicated that we could not show conclusively by analysis that the exhaust ductwork from the fans up to and including the ventilation stack will not fail by crimping during a seismic event. Therefore, a review was conducted to determine what equipment required to mitigate the consequences of a LOCA might not receive adequate cooling assuming a loss of ventilation due to crimping of the non-seismic exhaust ductwork. It was concluded that the outside recirculation spray pumps and the low head safety injection pumps ventilated by the Safeguards Area exhaust fans and the charging pumps ventilated by the Auxiliary Building Central Area exhaust fans are the only essential equipment that might not receive adequate cooling during this postulated event.

Based on this review the Auxiliary Building Central Area Ventilation Exhaust System has been modified to ensure operability following a seismic event. The modification consisted of installing a mechanical means of opening the Central Area exhaust ductwork on the Auxiliary Building roof and seismically supporting the exhaust ductwork from the Central Area fans up to and including the new exhaust port. Should ventilation flow be lost by crimping downstream of this exhaust port, the exhaust port will be opened and ventilation flow re-established. The exhaust from this path can be monitored by lining up the existing Ventilation Vent sampler radiation monitor to the Auxiliary Building Central Area exhaust.

The Safeguards Area Exhaust system, as originally designed is with the suction ducts to the fans, ½-HV-F-40A and B, seismically supported, and the discharge duct to the ventilation stack "B", non-seismically supported. If the Safeguards Area Exhaust system failed to operate the seismically supported local ventilation fans ½-HV-F-71A and B were designed to recirculate air over the pumps and motors to dissipate the heat in the Safeguards Area. This backup system requires manual fan initiation and opening an outside door at grade elevation to allow heated air to vent to the atmosphere. The source of cool air to the area is through the non-seismic supply air unit, ½-HV-HV-4.

It has been determined that it is not feasible to seismically upgrade the supply air units ½-HV-HV-4. Therefore, the Safeguard Area Exhaust system exhaust ducts will be seismically upgraded in a manner similar to the modifications to the Central Area Exhaust System and the outside door at grade level will be used as the supply of cool air. The discharge duct from fans ½-HV-F-40A and B will be seismically supported up to and including a new exhaust port. This pressure relief door would open and alarm in the control room should the ventilation flow be lost due to crimping downstream. The exhaust port will be located downstream of the existing ventilation vent sampler radiation monitor. We are continuing to evaluate the use of louvers in the roof of the Safeguards Area to allow automatic operation and improved supply air distribution.

In the interim, the backup recirculation fans, ½-HV-F-71A and B will be used to dissipate heat in the event of a LOCA followed by a seismic event causing the Safeguard Area Exhaust system exhaust ducts to crimp causing a loss of flow. Should the seismic event cause the supply air unit to become inoperable the Safeguards Area door will be used as the supply of cool air.

It is currently scheduled to have the seismic upgrade of the Safeguards Area Exhaust Ventilation system exhaust duct and the pressure relief door installed prior to full power operation on Unit No. 2.

Very truly yours,

B. R. Sylvia
Manager-Nuclear Operations
and Maintenance

cc: Mr. Victor Stello, Director
Office of Inspection and Enforcement