VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

February 3, 1976

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Regulatory File Cy

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Serial No. 847
PO&M/ALH:clw

Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Dear Mr. Moseley:

Pursuant to Surry Power Station Technical Specification 6.6.B.2, the Virginia Electric and Power Company hereby submits forty (40) copies of Unusual Safety Related Event Report No. USRE-S1-76-01.

The substance of this report has been reviewed by the Station Nuclear Safety and Operating Committee and will be placed on the agenda for the next meeting of the System Nuclear Safety and Operating Committee.

Very truly yours,

C. M. Stallings

C. M. Stallings
Vice President-Power Supply
and Production Operations

Enclosures
40 copies of USRE-S1-76-01

cc: Mr. Robert W. Reid, Chief
Operating Reactors Branch 4

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UNUSUAL SAFETY RELATED EVENT REPORT

USRE-S1-76-01

INOPERABILITY OF UNIT NO. 1 AND UNIT NO. 2 CONTAINMENT GASEOUS AND PARTICULATE RADIATION MONITORS

DOCKET NOS. 50-280
50-281

LICENSE NOS. DPR-32
DPR-37

JANUARY 2, 1976

SURRY POWER STATION

VIRGINIA ELECTRIC AND POWER COMPANY

I. INTRODUCTION

In accordance with Technical Specification 1.0-6 and 6.6-10, this report describes an unusual safety related event which was discovered on December 4, 1975. This occurrence involves the inoperability of containment gaseous and particulate monitors on Unit Nos. 1 and 2.

II. SUMMARY OF OCCURRENCE

At the time of the occurrence, Unit No. 1 was at refueling shutdown and Unit No. 2 was operating at 100 per cent power. On December 4, 1975, at approximately 0600 hours, a member of the operations staff noted that there was no air flow indication from the local flow indicator on the Unit No. 2 containment gaseous and particulate monitor cabinet. The flow indicator on Unit No. 1 was then checked and found to be reading zero. While the vacuum pump control switch on each unit was checked "on", neither unit indicated any air flow. A maintenance request was submitted to investigate and repair the vacuum pump on both units.

Each containment gaseous and particulate monitoring system has a flow fault alarm which indicates either too high or too low flow through the detector. Alarm indication is via a light on the radiation monitoring panel in the control room. At the time of the occurrence it was noted that there was no indication of a flow fault on Unit No. 2. A maintenance request was issued to repair the flow fault detection system on Unit No. 2. The condition of the flow fault indicator on Unit No. 1 was not noted at the time of the occurrence. Subsequent maintenance of the Unit No. 1 monitor indicated no apparent problems with the flow fault detection system. It was therefore concluded that the flow fault alarm light probably was on and was not observed by the operator.

Investigation revealed a failed bearing on the Unit No. 1 vacuum pump. The bearing was replaced and the pump tested satisfactorily and was returned to service. The loss of flow through the Unit No. 2 monitors was due to a clogged inline charcoal filter. Following replacement of the filter element, flow rate through the monitors returned to the design level of 10 cfm. The absence of a flow fault indication for Unit No. 2 was due to the flow fault detection vacuum switch being out of adjustment. The flow fault detection vacuum switch was readjusted and tested satisfactorily.

III. SAFETY IMPLICATIONS OF THE OCCURRENCE

The primary function of the containment particulate and gaseous monitors is to monitor and record the levels of particulate and gaseous activity within the containment. Alarm functions for each monitor include a high radiation alert and a high radiation alarm. A high radiation alarm on either the gaseous or particulate monitor will initiate containment purge isolation by tripping the purge fans and closing the containment purge dampers. In addition, these monitors serve as an indication of primary coolant leakage.

The possible consequences of the inoperability of a containment particulate and gaseous monitor are significantly reduced by the availability of redundant indications of containment radiation levels and by several alternate indications of primary coolant leakage. Each containment has a manipulator crane area radiation monitor with alert and alarm functions that cause containment purge isolation upon high radiation alarm actuation. The manipulator crane monitors would therefore serve as a backup in the event of a failure of the containment gaseous and particulate monitor. Alternate indications of primary coolant leakage include primary grade water and boric acid make-up flow rate, containment sump water level, containment pressure, temperature and humidity instrumentation and the reactor vessel head O-ring seal leak-off line temperature indication. In the absence of the containment gaseous and particulate monitors, the alternate indications of primary leakage should rapidly detect extremely small leaks.

IV. CONCLUSION

The inoperability of the containment gaseous and particulate monitor on Unit No. 1 was due to the failure of the radiation monitor vacuum pump. The Unit No. 1 vacuum pump has been repaired and returned to service. The inoperability of the Unit No. 2 monitors was due to a clogged inline charcoal filter. Following replacement of the filter element, flow-through the monitors returned to normal.

Due to the presence of alternate indications of containment activity and of several alternate methods of reactor coolant leakage detection, the inoperability of the containment gaseous and particulate monitors did not significantly affect the ability to safely operate the station and did not affect the health or safety of the general public.