VIRGINIA ELECTRIC AND POWER COMPANY
RICHMOND, VIRGINIA 23261

July 11, 1974

Mr. Norman C. Moseley, Director
Directorate of Regulatory Operations
United States Atomic Energy Commission
Region II - Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Serial No. 190
PO&M/JTB:clw

Docket No. 50-280
License No. DPR-32

Dear Mr. Moseley:

Pursuant to Surry Power Station Technical Specification 6.6.B.1, the Virginia Electric and Power Company hereby submits forty (40) copies of Abnormal Occurrence Report No. AO-S1-74-09.

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 AO-S1-74-09

cc: Mr. K. R. Goller, Assistant Director
for Operating Reactors

50-280

COPY SENT REGION II

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ABNORMAL OCCURRENCE REPORT

REPORT NO. AO-S1-74-09

VIOLATION OF LIMITING CONDITION OF OPERATION EMERGENCY DIESEL GENERATOR FUEL OIL SUPPLY

JUNE 12, 1974

DOCKET NO. 50-280
LICENSE NO. DPR-32

SURRY POWER STATION

VIRGINIA ELECTRIC AND POWER COMPANY

I. INTRODUCTION

In accordance with Technical Specification 6.6.B.1 for Surry Power Station, Operating License Number DPR-32, this report describes an abnormal occurrence which was identified on June 6, 1974. The Directorate of Regulatory Operations, Region II, was notified on June 6, 1974.

The occurrence described herein is classified as an abnormal occurrence pursuant to Technical Specification 1.0.I.2 which states that: "An abnormal occurrence is defined as: Any unit condition that results in violation of a limiting condition for operation as established in these Technical Specifications."

The occurrence described herein resulted in the violation of Technical Specification 3.16.A.7 which requires that a minimum of 290 gallons of fuel oil be maintained in the emergency diesel generator day tanks. The level of No. 1 day tank was maintained at approximately 190 gallons for a short period of time.

II. SUMMARY OF OCCURRENCE

On June 6, 1974, at approximately 0135 hours, with the unit at 100 per cent of rated power, it was discovered that the quantity of fuel in the No. 1 emergency diesel generator fuel oil tanks was below that specified in Technical Specification 3.16.A.1. The combined capacity of the auxiliary tank and the base tank, collectively referred to as the day tank, was less than 190 gallons, as compared with the technical specification limit of 290 gallons.

The low level in the base tank was discovered during an operability check when No. 3 diesel generator was removed from service for

maintenance. There was no fuel oil in the auxiliary tank. The operator was alerted by the annunciator "Emergency Generator 1 Trouble" alarm when the base tank level reached the 190 gallon alarm setpoint. The reduction in fuel inventory was caused by the failure of both fuel oil pumps to start automatically on low level to maintain sufficient oil inventory in the auxiliary tank. The failure of the pumps to start was caused by inoperability of the level switches in the auxiliary tank. The level control switches are models A103 and A153-K-TDM manufactured by the Magnetrol Corporation.

III. ANALYSIS OF OCCURRENCE

The diesel generator fuel oil supply system is schematically shown in the attached figure. The system consists of a 550 gallon capacity base tank on the diesel generator, two (2) fuel oil transfer pumps for each diesel generator, an auxiliary tank of 550 gallon capacity, two (2) fuel oil pumps, two (2) underground tanks (20,000 gallons each) and a 210,000 gallon aboveground storage tank. The aboveground storage tank and the underground tanks serve the three (3) diesel generators. Each of the diesel generators is equipped with redundant flow paths containing the remainder of the listed equipment.

The base tanks are automatically filled by the fuel oil transfer pumps on low level in the base tanks and the diesel is operating and the generator is excited. The auxiliary tanks are supplied from the underground storage tanks by fuel oil pumps which are actuated

by level switches on the auxiliary tank. There are two (2) level switches on the auxiliary tank, each of which starts one (1) of the two (2) pumps and opens the solenoid valves at a preset level.

The occurrence reported herein was caused by the inoperability of both level switches in the auxiliary tank. Investigation of the occurrence revealed that only one (1) of the two (2) level switches were in place. The in place switch had apparently been rendered inoperable as a result of a faulty spring causing the switch to hang up. The other switch had been removed from service for approximately two (2) weeks to repair a faulty mercoid switch. Since each of the level switches separately actuate one (1) fuel oil pump, both of the pumps were rendered inoperable in the automatic mode.

IV. CORRECTIVE ACTION TO PREVENT RECURRENCE

The immediate corrective action was to repair both defective switches and return them to service. In addition, a low level alarm will be added to the auxiliary tank to indicate when a problem occurs in the fuel transfer from the underground tank to the auxiliary tank.

Station personnel have been cautioned to assure that when equipment is removed from service for maintenance the Shift Supervisor is advised of operability status.

V. ANALYSIS AND EVALUATION OF SAFETY IMPLICATIONS OF THE OCCURRENCE

The emergency diesel generators provide an independent, automatically starting power supply to vital auxiliaries if a normal source of power is not available.

Diesel generator No. 1 would have operated a short time on the available day tank fuel supply and operator action of placing the fuel oil transfer pumps in the manual mode would have ensured a fuel oil supply to the diesel generator.

Emergency diesel generator No. 3 was operable, as proven by an operability check at the time, and could have assumed the load if it had been required.

VI. CONCLUSIONS

The licensee concludes that:

1. The occurrence described herein was caused by the inoperability of the auxiliary fuel oil tank level control switches.
2. The occurrence reported herein did not affect the safe operation of the station.
3. The occurrence described herein did not adversely affect the health or safety of the general public.

EMERGENCY DIESEL GENERATOR FUEL OIL SYSTEM