

DUKE POWER COMPANY

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VICE PRESIDENT
NUCLEAR PRODUCTION

84 OCT 10 P 13: 07
October 13, 1984

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Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30323

Subject: Oconee Nuclear Station, Units 1, 2, and 3
Docket Nos. 50-269, -270, -287

Dear Mr. O'Reilly:

Please find attached a Special 5 day Report concerning the isolation of the overhead power path from Keowee Hydroelectric Station (the primary emergency AC power source) to the Oconee station switchyard. Initial notification of this incident was made with the NRC Region II office on September 28, 1984. This report is submitted pursuant to Oconee Nuclear Station Technical Specification 3.7.9 and describes an incident which is considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

RFH:slb

Attachment

cc: Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Ms. Helen Nicolaras
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mr. J. C. Bryant
NRC Resident Inspector
Oconee Nuclear Station

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Mr. James P. O'Reilly, Regional Administrator
October 3, 1984
Page Two

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Group File: OS-801.02
Group File: OS-815.04

Duke Power Company
Oconee Nuclear Station
Special Report

230KV Overhead Line Between Keowee and
Oconee Isolated Due to Opening of PCB-9

Description of Occurrence:

On September 28, 1984 at 1321 hours, Power Circuit Breaker (PCB) 22 explosively short-circuited while being put back into service following the repair of an SF₆ gas leak. The short circuit tripped PCB-22 which caused a red bus differential lockout and opened PCBs 7, 8, 9, 10, 13, 16, 19, 23, 26, 28, and 31. The unexpected opening of PCB-9 isolated the 230KV overhead line from the Keowee Hydroelectric Station (the primary emergency AC power source) resulting in operation contrary to an applicable technical specification: The technical specification states that when one Keowee unit is unavailable for longer than 72 hours, then the remaining unit shall be available to the 230KV overhead transmission circuit. Keowee Unit 2 was unavailable due to a scheduled maintenance outage. Operations personnel determined that the safest manner in which to resume operation under the technical specification was to close PCB-9; this was done after confirmation that the red bus differential lockout indeed had been caused by the PCB-22 failure. The red bus differential lockout was reset at 1427 hours and PCBs 7, 8, 10, 13, 16, 19, 26, 28, and 31 were reclosed. PCB-22 was isolated so that its inspection and repair could begin. PCB-23 was reclosed at 1521 hours following an inspection for possible damage due to its proximity to the PCB-22 explosion.

Cause of Occurrence:

An SF₆ gas leak had been identified prior to September 25, 1984 when PCB-22 was isolated for maintenance. The leak was found in a cracked weld in the lower part of the third (3rd) phase support section. The weld was repaired but a smaller leak still existed on September 28, when PCB-22 was being put back into service. The leak was small enough that PCB-22 was to be put into service during the period of September 29th and 30th and then removed from service October 1st for the smaller gas leak to be repaired.

Figure 1 is an electrical schematic diagram of the Oconee switching station which shows the relative positions of the various breakers. A drawing of power circuit breaker PCB-22 is included as Figure 2. The short circuit occurred inside the third (3rd) phase section of PCB-22. The porcelain insulator on the west side of this section was shattered by the short circuit. The cause of the short circuit had not been determined as of October 3rd.

Analysis of Occurrence:

The explosion which occurred when PCB-22 short circuited caused no injuries to station personnel and no apparent damage to equipment other than PCB-22. The fact that the station operated in a manner which was inconsistent with the applicable technical specification, for an interval of approximately 17 minutes, did not result in an unsafe condition. Keowee Hydro Unit 1 was available via the 13.8KV underground feeder circuit, and the dedicated combustion-turbine driven generators at the Lee Steam Station were available as a secondary emergency power source. Therefore the health and safety of the public were not affected by this incident.

Corrective Action:

Following an on-the-spot safety evaluation by Operations personnel, PCB-9 was reclosed, thus ensuring that station operation would proceed in accordance with the technical specification. The Keowee Unit 2 maintenance outage was completed earlier than scheduled and a routine maintenance step requires Unit 1 to be temporarily removed from service so that both units can be returned to service. Return of the units is expected by October 5, 1984, at which time the affected technical specification will no longer apply. Repair work is proceeding on PCB-22. While the Keowee units are out of service, tests using input signals are being conducted to determine why PCBs 8 and 9 opened on the red bus differential lockout.



FIGURE 2

POWER CIRCUIT BREAKERS

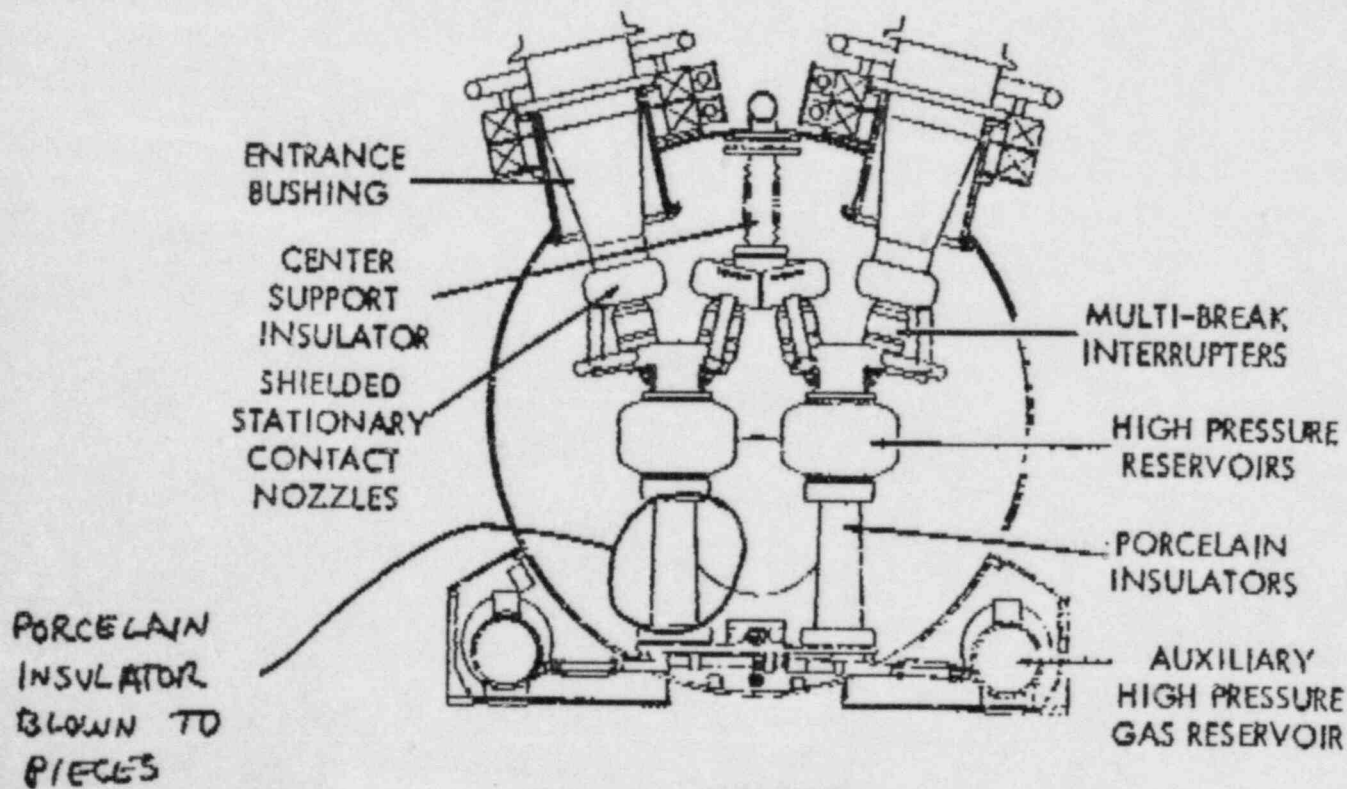
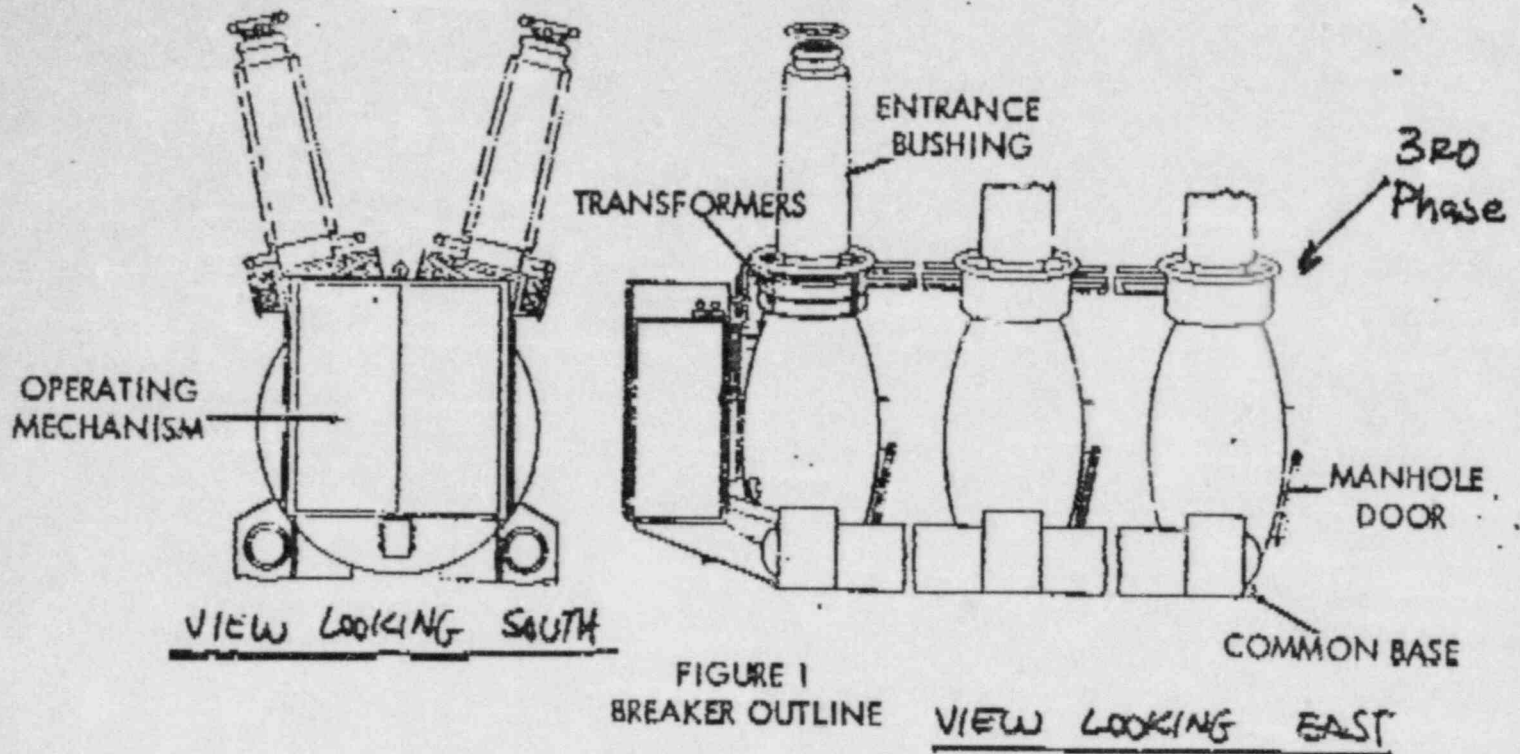


FIGURE 2
SINGLE POLE CROSS SECTION
VIEW LOOKING NORTH