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October 4 1983

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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 30303

Re: Oconee Nuclear Station
Docket No. 50-269, -270, and -287

Dear Mr. O'Reilly:

Please find attached a Special 5-Day Report concerning the loss of power on both standby buses with Keowee Unit 1 out of service. 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 its effect on the health and safety of the public.

Very truly yours,

H. B. Tucker / BTU

Hal B. Tucker

JCP/php

Attachment

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

INPO Records Center
Suite 1500
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Atlanta, Georgia 30339

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

Mr. John F. Suermann
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Duke Power Company
Oconee Nuclear Station
Special Report

Lee Steam Station Gas Turbine Tripped
Deenergizing Both Standby Buses
While Keowee Unit 1 Was Out of Service

On September 29, 1983 with Keowee Unit 1 out of service for planned maintenance and Keowee Unit 2 available (returned to service September 25, 1983 at 0355 hours), Lee "6C" Gas Turbine was being used to energize both Oconee 4160V Standby Buses as required by Technical Specification 3.7.4. Lee "6C" tripped off line at 1647 hours on September 29, 1983 thereby deenergizing both standby buses and placing the two operating Oconee units in a degraded mode beyond that allowed by Technical Specification 3.7.4.a. This incident is reportable to the Nuclear Regulatory Commission in accordance with Technical Specification 3.7.9.

A safety evaluation was performed pursuant to Technical Specification 3.7.9 and the decision was made that continued operation of the units was allowed since power from a Lee gas turbine would be regained in a short period of time. However, an Oconee procedure concerning the operation of the 100 KV power supply had more restrictive constraints and 10 percent per hour shutdowns were started on Units 1 and 3. This shutdown requirement was lifted at 1707 hours when power to the standby buses was restored. The total time that they were unavailable was 20 minutes.

The exact cause of the Lee "6C" gas turbine trip cannot be determined at this time. When the trip occurred, an operator was dispatched to the turbine panel to note specific alarms. The five alarms noted were:

- 1) 4500 KVA Main Transformer Trip
- 2) Turbine Overspeed Trip
- 3) Combustion out-of-fire or Recorder off
- 4) Low Lube Oil Pressure
- 5) Loss of AC voltage

Lee Steam Station does not have an event recorder so the order of the alarms could not be determined. No other alarms or protective relay targets were noted. Therefore, this incident is not similar to the September 22, 1983 trip.

Since the operating unit supplies its own auxiliaries, any trip would cause a loss of AC voltage which in turn would cause the other four alarms to annunciate. Each alarm was investigated to determine if it could have initiated the trip. The 4500 KVA Main Transformer was checked for problems and none were noted. The turbine overspeed trip mechanism was found to be still set thereby eliminating the possibility of an overspeed trip. However, if the turbine pressure switch failed or malfunctioned, a turbine overspeed trip alarm would annunciate and trip the turbine. The pressure switch was checked and found to be operative.

The combustion out-of-fire and recorder off alarm is a dual alarm. If any of the twelve combustors fail to ignite or the recorder loses power or malfunctions, the unit will trip and cause the alarm. The lube oil pressure to the turbine, the pump, and the supply system appeared good when checked; however, a spurious actuation of the pressure switch could have caused the alarm and trip. Since all five alarms can be explained and the order of the alarms cannot be determined, the direct cause of the trip cannot be determined. An investigation is still underway to determine the cause and the results will be supplied in supplemental correspondence when available.

At the time of the incident, both the Lee "4C" and "5C" gas turbine were available, and the Lee "5C" was immediately placed in startup mode. Both Lee "6C" and Lee "5C" became ready for start at about the same time, and it was decided to use Lee "6C" to supply power to the Oconee standby buses again and to use Lee "5C" as a backup. Additional corrective action taken was to manually block the recorder trip signal since the 04X relay does not block this signal. Oconee Unit 1 returned to 100 percent full power at 1721 hours while Unit 3 returned to 100 percent full power at 1820 hours.

While one Keowee unit was out-of-service and the standby buses were not energized by Lee, power was always available from Keowee Unit 2 via the underground feeder circuit required by Technical Specification 3.7.4. Also available was the normal Duke Power Company transmission system to the 230 KV switchyard via at least two 230 KV transmission lines on separate towers. During this incident both the Lee "4C" and Lee "5C" Gas Turbines were available and could have energized the Standby Buses within one hour. The probability of losing offsite power during this event is very small; therefore, the health and safety of the public were not endangered.