DUKE POWER COMPANY
OCONEE UNIT 3

Report No.: RO-287/76-12

Report Date: September 17, 1976

Occurrence Date: August 19, 1976

Facility: Oconee Unit 3, Seneca, South Carolina

Identification of Occurrence: Loss of ES 600V Motor Control Center

Conditions Prior to Occurrence: Unit at 80 percent full power

Description of Occurrence:

On August 19, 1976, following the connection of a battery charger, 3CS, to instrument and control battery, 3CB, the feeder breaker connecting the Oconee Unit 3 3X10 Load Center to Motor Control Center 3XS3 tripped resulting in a loss of power to MCC 3XS3 and to associated ES equipment for nine minutes. The equipment consisted of Reactor Building Cooling Unit 3B and three ES Reactor Building isolation valves. The battery charger was disconnected and the breaker was reset. All loads were returned to service except RBCU 3B. Subsequent examination revealed that a control power cable in the breaker between RBCU 3B and MCC 3XS3 had failed. Approximately seven hours later repair was completed on the RBCU 3B breaker and the unit was returned to service.

Apparent Cause of Occurrence:

Investigation revealed that two incidents occurred within a short span of time that could have resulted in tripping the breaker between the 3X10 Load Center and the MCC 3XS3. The most probable cause of the occurrence was the failure of a control power cable in the breaker between the RBCU 3B and MCC 3XS3. This cable was partially severed due to contact with another cable and therefore shorted to ground. The short could have resulted in the trip of the breaker between the load center and the motor control center. Also, a battery charger, which was powered via MCC 3XS3, was connected to an instrument and control battery and could have caused an overload and the subsequent loss of the load center.

Analysis of Occurrence:

This occurrence resulted in the loss of three ES valves receiving power via Motor Control Center 3XS3 for a period of nine minutes. The valves were returned to service as per Technical Specification 3.6.4.6, and during this time, the redundant ES valves were operable and would have functioned properly, if required. Additionally, one Reactor Building cooling unit was out of service for approximately seven hours. As required by Oconee Technical Specification 3.3.6(d), both Reactor Building spray systems and the remaining two Reactor Building cooling units were operable during this period. It is, therefore, felt that due to the operability of redundant ES trains and the brief interval over which this incident occurred that the health and safety of the public were not affected by this occurrence.

Corrective Action:

To assure that similar cable routing problems do not exist, all RBCU breakers will be inspected by November 1, 1976. A Nuclear Station Modification, which will reroute the power supply to the RBCU's by installing a separate power line and feeder breaker for the RBCU's between the motor control center and the load center, has been written and will be implemented by January 1, 1977. Additionally, a study of the breaker coordination for 600 volt ES motor control centers and their respective load centers will be completed by January 1, 1977.