

DUKE POWER COMPANY
OCONEE UNIT 2

Reportable Occurrence: RO-270/78-10

Report Date: November 1, 1978

Occurrence Date: October 4, 1978

Facility: Oconee Unit 2, Seneca, South Carolina

Identification of Occurrence: Inoperable Control Rod

Conditions Prior to Occurrence: 100% Full Power

Description of Occurrence:

On October 4, 1978, control rod 7 of group 6 was found to have a short in the "C" phase of its associated stator. The short was discovered during a routine Reactor Protective System on-line test. The rod was determined to be inoperable and the resulting shutdown margin calculation revealed that the required 1.0% shutdown margin did not exist when the worth of the inoperable rod was considered in the reactivity balance. Consequently, unit shutdown was initiated at a rate of 10% F.P./hr. per Technical Specification 3.5.2.2 and station procedures. The power decrease was terminated at 70% F.P. after the control rod was declared operable following completion of its operability test. The remaining control rods were then moved to complete the bi-weekly control rod operability test. Reactor power was increased from the 70% F.P. level following the completion of the control rod operability test.

On October 17, 1978, Unit 2 was manually tripped due to a problem in secondary systems. Following the trip, it was discovered that control rod 7 of group 6 could not be withdrawn. The unit was started up on the following day with the inoperable rod fully inserted and with reactor power being limited to 60% F.P. per Technical Specification 3.5.2.2.i and by the quadrant power tilt limit of Technical Specification 3.5.2.4.

Cause of Occurrence:

The cause of the rod inoperability was a short in the control rod drive stator from the "C" phase to neutral caused by excessive moisture in the stator.

Analysis of Occurrence:

At the time the rod was declared to be inoperable, Group 6 was in a fully withdrawn position with no powered movement anticipated. The safety function of the rod in the withdrawn position is to drop in the event of a reactor trip. The rod was initially declared inoperable since it could not be conclusively determined at that time whether the rod could be moved. The short, however, did not inhibit the rod from performing its intended safety function. Following the successful movement of the rod, the control rod was declared operable. Thus, this incident caused no adverse effect to the health and safety of the public.

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Corrective Action:

It is intended to replace the defective control rod drive stator during the forthcoming Unit 2 refueling outage.

