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January 6, 1992

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: Catawba Nuclear Station, Unit 2
Docket No. 50-414
Special Report
Valid Failure of Diesel Generator 2A

Pursuant to Technical Specification 4.8.1.1.3 and 6.9.2, find attached a Special Report concerning the Unit 2 Diesel Generator A (D/G 2A) valid failure that occurred on December 5, 1991.

Very truly yours,

M. S. Tuckman

CRL/DG2A/16.92

Attachment

xc: S. D. Ebneter
Regional Administrator, Region II

W. T. Orders
Senior Resident Inspector

R. E. Martin, ONRR

IE22
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SPECIAL REPORT

CATAWBA NUCLEAR STATION
DIESEL GENERATOR 2A VALID FAILURE
DUE TO SEQUENCER TIMER FAILURE

A valid failure of Diesel Generator (D/G) 2A occurred on December 5, 1991 due to a failure of a timer in the load sequencing circuitry. This failure occurred during Unit 2 Refueling Outage End of Cycle 4 (EOC) A Train Engineered Safety Features (ESF) testing. D/G 2A was on a weekly testing frequency at the time of the failure. Unit 2 was in Mode 5 at the time. This is the 2nd valid failure in the last 20 valid tests and 5th valid failure in the last 100 valid tests. There is no unavailability time associated with this failure since Technical Specifications require only one operable D/G during Mode 5. Since D/G 2B was operable, the 2A D/G was not required. D/G 2A remains on a weekly test frequency in accordance with Technical Specification 4.8.1.1.2 Table 4.8-1.

At approximately 1130 hours on December 5, 1991, Performance began the Blackout/LOCA portion of the ESF testing per PT/2/A/4200/09. A 2 out of 3 degraded bus signal was initiated followed by a Safety Injection signal which caused the incoming feeder breaker to the ETA bus to trip and D/G 2A to start as designed. All loads were shed as required and the D/G came up to speed. At this point, the D/G breaker closed and was ready to accept loads. However, none of the load groups were sequenced onto the ETA bus. The test was halted and the D/G was manually shutdown to protect the engine since Nuclear Service Water (RN) cooling water was unavailable when this load was not sequenced on. Performance initiated Work Request 91097849-01 for the Instrumentation and Electrical section (IAE) to investigate and repair the cause of the sequencer failure.

IAE checked the operation of several timers/relays and it was discovered that time delay module HC(TRA2T) in cabinet 2DGLSA-1 was broken. This timer provides a momentary reset signal to the sequencer when a blackout and a LOCA exist simultaneously for 0.5 seconds. The Normally Open output contacts for this module were stuck in the closed position even when there was no power applied to the timer. This caused relay HB(TRA2) in 2DGLSA-1 to be continuously energized. Normally closed contact 5 and 5a on HB relay are suppose to momentarily open to drop out all committed sequencer time delay loading relays on a reset. However, with the failed timer, this contact never returned to the closed position to allow the loading process to begin. IAE replaced the timer and Performance completed their ESF testing with no other problems.

The failed part is a Cutler-Hammer Model #D87XDL30 off delay timer. No similar type failures of this model of timer have been seen at Catawba. The timer had been tested on 10/29/91 per predefined work order # 91035580-01 and found to be out of calibration but not failed in a manner where the output contacts would not change states. All sequencer time delay relays for each D/G are tested each outage to verify their correct calibration and operation.