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May 12, 1988

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U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413
Special Report

Gentlemen:

Pursuant to Technical Specification 4.8.1.1.3, please find attached a Special Report concerning a Diesel Generator 1A failure to start due to faulty pneumatic logic components which took place on April 12, 1988.

Very truly yours,

Hal B. Tucker

Hal B. Tucker

JGT/19/sbn

Attachment

xc: Dr. J. Nelson Grace, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
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SPECIAL REPORT
CATAWBA NUCLEAR STATION, UNIT 1

DIESEL GENERATOR 1A FAILURE TO START
DUE TO FAULTY PNEUMATIC LOGIC COMPONENTS

On April 12, 1988, a Valid Failure occurred while performing Diesel Generator (D/G) 1A Operability Periodic Test. D/G 1A tripped during a start attempt (start no. 652) at 0352 hours. This was the fourth Valid Failure in the last 100 Valid Starts, and the third within the last 20. Work Request 27513 OPS was written by Operations for Instrumentation and Electrical (IAE) to troubleshoot D/G 1A and the D/G was declared inoperable at 0400 hours. Investigation by IAE revealed that one of the three low low lube oil pressure pneumatic trip valves was faulty. It would periodically fail to close as oil pressure was applied to the valve. This caused the D/G to trip, and apparently caused the previous trip on March 23, 1988, as the symptoms were identical. The other two trip valves were disassembled and showed signs of corrosion. All three of these trip valves were replaced.

Three subsequent D/G 1A start attempts were successful and the D/G was declared operable at 0025 hours on April 13, 1988. The D/G was inoperable for 20 hours, 25 minutes.

The D/G remains on the seven day testing interval in accordance with Technical Specification Surveillance 4.8.1.1.2.

On April 19, 1988 and April 25, 1988, additional Valid Failures on D/G 1A during periodic testing occurred. The cause for these failures also appears to be failures of the D/G Pneumatic Control System.

In order to minimize the potential for recurrence, Operations personnel have increased the blowdown frequency of all D/G Starting Air System (VG) air compressor aftercoolers from once to twice per shift. This is intended to reduce the amount of carry-over moisture entering the air dryers, which is the suspected cause of the valve corrosion problem. Operations personnel have requested the Maintenance group to double the frequency of performing Preventive Maintenance (PM) on the VG air dryers, from semi-annually to quarterly.

Operations personnel will initiate work requests to inspect the internals of all pneumatic trip valves on all remaining Unit 1 and Unit 2 D/Gs during scheduled maintenance periods over the next six months.

Performance personnel are planning to increase their frequency of testing Dew Point of the air in all VG receivers from semi-annually to monthly.

Long term solutions to the D/G pneumatic trip problems are currently being investigated by Operations, Projects, and IAE personnel.

Operations personnel are pursuing modifications to install additional desiccant filters in each main instrument air line to the D/Gs. They are also pursuing the installation of automatic drains on the D/G Air Compressor aftercoolers.

IAE and Operations personnel are continuing to investigate the cause for corrosion of the low low lube oil pressure trip valves.

Projects and General Office personnel are evaluating alternative electric D/G trip systems for the Emergency Mode trips.

Operations personnel are to submit a Station Problem Report which will further evaluate the replacement of the non-emergency mode trips with an electronic system.

Offsite power and the alternate train D/G were verified to be operable during these periods of D/G 1A inoperability, as required by Technical Specifications.