ENTERGY

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June 26, 1992

U.S. Nuclear Regulatory Commission
Mail Station P1-137
Washington, D.C. 20555

Attention: Document Control Desk

SUBJECT: Grand Gulf Nuclear Station
Unit 1
Docket No. 50-416
Special Report 92-003-00

GNRO-92/00075

Gentlemen:

This special report is being submitted pursuant to Grand Gulf Nuclear Station Technical Specification 4.8.1.1.3.

On May 25, 1992 at approximately 1713 hours while performing post-maintenance and post-modification testing, Division 1 standby diesel generator (DG 11) experienced a non-valid failure. DG 11 was manually started at 1559 hours and incrementally loaded from 1 megawatt (MW) to 5.45 MW. DG 11 had been running at 5.45 MW load for 2.28 hours with no anomalies indicated in the control room or at the local control panel. The non-licensed operator (NOB) noticed the field voltage dropped to zero then immediately pegged high prior to DG 11 output breaker 152-1508 tripping open. DG 11 continued to run until it was manually shut down by operators. DG 11 was then secured for corrective maintenance.

A work order was initiated to investigate the output breaker trip. Investigation determined that 152-1508 tripped open due to large oscillations in DG 11's field voltage. The oscillations were evaluated to have been caused by excessive resistance due to erratic continuity at DG 11's rectifier bridge selector switch.

The DG 11 exciter-regulator system includes redundant rectifier bridge circuits. The circuits are controlled via a bridge selector switch which features blade/clip style contacts.

Contact resistance of the bridge selector switch was measured as part of troubleshooting for a non-valid failure which occurred May 13, 1991. Troubleshooting for that event determined the contact resistance was excessive. Compressive loading and alignment of switch contacts were inspected; compressive loading was increased on one of six sets of

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contacts in service until satisfactory resistance values were obtained. Measurements taken after cleaning and relubrication of the other five sets of contacts in service indicated that resistance values had diminished. Cleaning and relubrication of the other six sets of contacts for the redundant bridge was also performed and resulted in improvements in contact resistance values. The failure mechanism was believed to have been degradation of contact lubricant. Maintenance activities were developed to address periodic cleaning, relubrication, and resistance measurements of the bridge selector switch contacts.

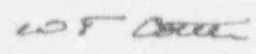
This recent failure indicates that the maintenance program has not been successful in eliminating the failure mechanism as expected. Investigation has revealed that contact resistance can vary without bridge selector switch manipulation.

The bridge selector switch has been bypassed from DG 11's field circuit as a result of this recent failure. The redundant rectifier bridge circuit and selector switch are unnecessary for performance of DG 11's safety function. Division 2 standby diesel generator (DG 12) has a identical exciter-regulator system. DG 12 has not experienced this failure mechanism. Modification to DG 12's circuit will be considered.

The bridge selector switch apparently caused the previous failures of DG 11 which occurred on November 27, 1990 and May 13, 1991. The December 18, 1989 failure of DG 11 had similar symptoms as the other failures referenced, but the cause was attributed to loose potential transformer fuse connections. The bridge selector switch may have caused the December 18, 1989 failure. Those failures were previously discussed in correspondences from Entergy Operations, Inc. (EOI) dated January 17, 1990, December 27, 1990, and June 12, 1991 respectively. Correspondence from EOI dated August 20, 1991 discussed revision of commitments contained in the December 27, 1990 correspondence.

Entergy Operations, Inc. regards the event as being a valid test and non-valid failure pursuant to Position C.2.e(7) of Regulatory Guide 1.108 since DG 11 was unable to power ESF loads in response to a bona fide signal in this condition. There have been no valid failures of DG 11 in the last 20 tests and four valid failures in the last 100 tests.

Yours truly,



WTC/BAB/cg

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