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USNR Exhibit 24, page 1 of 4

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OFFICE OF SECRETARY
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ELV-01516
0012

Docket No. 50-424

U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Atlanta, GA 30323
ATTN: Mr. S. D. Ebnetter

Dear Mr. Ebnetter:

VOGTLE ELECTRIC GENERATING PLANT
CONFIRMATION OF ACTION LETTER

On March 20, 1990, a site area emergency was declared due to a loss of offsite power concurrent with a loss of onsite emergency diesel generator capability. Following the event, GPC received a Confirmation of Action Letter dated March 23, 1990 concerning certain actions we were taking. We have reviewed the March 20th event and the appropriate corrective actions necessary for entry into Mode 2 have been accomplished. Therefore, we are requesting approval to return Unit 1 to Mode 2 and subsequent power operation. The following discussion provides justification for this request.

In accordance with Vogtle Electric Generating Plant procedures, an event review team has investigated the events leading up to and following the site area emergency. The event review team has presented the results of its review to management and those recommendations considered important for continued safe plant operation have been implemented. These include establishment of a management policy on control and operation of vehicles (see attached letter from George Bockhold to site personnel); upgrading of emergency notification network communications (see attached letter from George Bockhold to Emergency Directors and Communicators); retesting and calibration of both Unit 1 emergency diesel generator control systems; temporary barricades to prevent unnecessary entry into low voltage switchyard areas; and communications of immediate corrective actions related to operations to licensed operators.

In addition, the event review team report also contains a number of longer-term recommendations which require additional management review and evaluation. These include the sequencing of outage activities; plant conditions during mid-loop operations; post-maintenance diesel functional testing; emergency notification system upgrades; changing diesel generator control logic; and re-evaluating the duties and responsibilities of the Emergency Director.

NUCLEAR REGULATORY COMMISSION

Docket No. 50-424/425-OLA-3 EXHIBIT NO. I+II-24

In the matter of Georgia Power Co. et al., Vogtle Units 1 & 2

☐ Staff ☐ Applicant ☒ Intervenor ☐ Other

☒ Identified ☐ Received ☐ Rejected Reporter CR

DATE 05-17-95 Witness Stipulated

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U. S. Nuclear Regulatory Commission
Region II
ELV-01516
Page Two

The most significant occurrence during the event of March 20, 1990, involving failure of Diesel Generator (DG) 1A to remain running to support shutdown cooling. Georgia Power Company, utilizing utility and vendor technical expertise, has investigated the DG failure and has determined the following:

- a. During bench testing, all three jacket water temperature switches were found to be set high during the DG maintenance inspection in early May 1990 (by approximately 6-10 degrees F above the setpoint). All three were adjusted downward using a calibration technique that may have differed from that previously used.
- b. Following the March 20 event, all three switches were again bench tested. Switch TS 19110 was found to have a setpoint of 197 degrees F which was approximately 6 degrees F below its previous setting. Switch TS 19111 was found to have a setpoint of 199 degrees F which was approximately the same as the original setting. Switch TS 19112 was found to have a setpoint of 186 degrees F which was approximately 17 degrees F below the previous setting and was readjusted. Switch TS 19112 also had a small leak which was judged to be acceptable to support diagnostic engine tests and was replaced.
- c. During the subsequent test run of the DG on March 30, one of the switches (TS 19111) tripped and would not reset. This appeared to be an intermittent failure because it subsequently reset. This switch and the leaking switch (TS 19112) were replaced with new switches. All subsequent testing has been conducted with no additional problems.
- d. The Unit 1 jacket water temperature switches have been recalibrated with the manufacturer's assistance to ensure a consistent calibration technique.
- e. Subsequent testing indicated that the diesel annunciator indication of March 20, 1990 is reproduced on a high jacket water temperature trip.
- f. A test of the jacket water system temperature transient during engine starts was conducted. The purpose of this test was to determine the actual jacket water temperature at the switch locations with the engine in a normal standby lineup, and then followed by a series of starts without a rolling the engine to replicate the starts of March 20. The test showed that jacket water temperature at the switch location decreased from a standby temperature of 163 degrees F to approximately 156 degrees F and remained steady.

U. S. Nuclear Regulatory Commission
Region II
ELV-01516
Page Three

9. Since March 20, 1990, GPC has performed numerous sensor calibrations (including jacket water temperatures), extensive logic testing, special pneumatic leak testing, and multiple engine starts and runs under various conditions. Since March 20, the 1A DG has been started 18 times, and the 1B DG has been started 19 times. No failures or problems have occurred during any of these starts. In addition, an undervoltage start test without air roll was conducted on April 6, 1990 and the 1A D/G started and loaded properly.

Based on the above facts, we have concluded that the jacket water high temperature switches were the most probable cause of both trips on March 20, 1990.

In addition, the following actions have been or are being implemented to ensure a high state of diesel reliability.

1. Operators are being trained prior to their next shift to ensure that they understand that an emergency reset will override the high jacket water temperature trip. Alarm response procedures will be revised to address emergency reset functions prior to April 30, 1990.
2. The undervoltage start feature of the Unit 1 DGs has been modified such that the non-essential engine trips are bypassed. However, alarms are still provided to inform the operators of off normal conditions. (This change will be implemented on Unit 2 prior to April 30, 1990.)
3. GPC is evaluating the possibility of a design change and Technical Specification change to delete the jacket water high temperature trip as an essential engine trip.
4. GPC has reviewed air quality of the D/G air system including dewpoint control and has concluded that air quality is satisfactory. Initial reports of higher than expected dewpoints were later attributed to faulty instrumentation. This was confirmed by internal inspection of one air receiver on April 6, 1990, the periodic replacement of the control air filters last done in March, 1990 which showed no indication of corrosion and daily air receiver blowdowns with no significant water discharge.
5. Based on discussions with the NRC in Atlanta on April 9, 1990, GPC will finish reviewing the event review team's long term recommendations and will transmit a summary and schedule of the actions taken or to be taken to the NRC by May 15, 1990. The administrative procedures that specify control of vehicles in the perimeter area will also be revised by May 15.

U. S. Nuclear Regulatory Commission
Region II
ELV-01516
Page Four

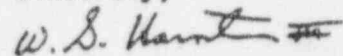
6. GPC will continue to work with the IIT and an independent lab to evaluate the instruments currently under quarantine. Upon completion of the the lab test, calibration procedures will be revised as necessary to ensure consistent performance.

Completion of these investigations, reviews, tests and corrective actions justify GPC's determination that the DG's are operable. GPC will continue to work with the Transamerica DeLaval Incorporated Owners Group to improve DG reliability. GPC will also review possible improvements to protective instrumentation and controls.

Based on the above discussion, we have completed the appropriate corrective actions necessary to safely operate the unit. We request NRC approval to allow Unit 1 to return to operation.

Should you have any questions, please inquire.

Sincerely,



W. G. Hairston, III

WGH,III/NJS/gm

Attachment

xc: Georgia Power Company
Mr. C. K. McCoy
Mr. G. Bockhold, Jr.
Mr. R. M. Odom
Mr. P. D. Rushton
NORMS

U. S. Nuclear Regulatory Commission
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