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Georgia Power

THE SOUTHERN ELECTRIC SYSTEM

HL-1885
002371

November 6, 1991

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

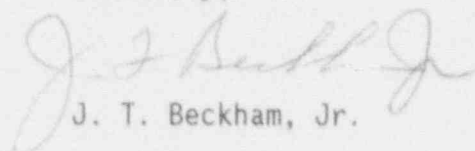
PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES D-R-57, NPF-5
RESPONSE TO NOTICE OF VIOLATION

Gentlemen:

In response to your letter of October 7, 1991 and in accordance with the provisions of 10 CFR 2.201, Georgia Power Company (GPC) is providing the enclosed response to the Notice of Violation associated with NRC Inspection Report 91-202. A copy of this response is being provided to NRC Region II for review. In the enclosure, a transcription of the NRC violation precedes GPC's response.

Should you have any questions, please contact this office.

Sincerely,



J. T. Beckham, Jr.

JKB/cr

Enclosure: Response to Notice of Violation

cc: (See next page.)

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U.S. Nuclear Regulatory Commission
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Page Two

cc: Georgia Power Company
Mr. H. L. Sumner, General Manager - Nuclear Plant
NORMS

U.S. Nuclear Regulatory Commission, Washington, D.C.
Mr. K. Jabbour, Licensing Project Manager - Hatch

U.S. Nuclear Regulatory Commission, Region II
Mr. S. D. Ebnetter, Regional Administrator
Mr. L. D. Wert, Senior Resident Inspector - Hatch

ENCLOSURE

PLANT HATCH - UNITS 1, 2
NRC DOCKETS 50-321, 50-366
OPERATING LICENSES DPR-57, NPF-5
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Violation 91-202

10 CFR Part 50, Appendix B, Criterion III, requires that design control measures be provided for verifying or checking the adequacy of design, such as by the performance of design reviews, by the use of alternate or simplified calculation methods, or by the performance of a suitable testing program.

Contrary to the above, the following deficiencies were identified:

- a. Undervoltage protection for degraded grid voltage was not adequate to ensure that accident mitigating equipment would get sufficient voltage to perform their safety function (91-202-01).
- b. A design review had not been performed to evaluate the impact of load additions and transformer tap changes on the undervoltage protection for the electrical distribution system (91-202-02).
- c. Fault current relay protection on the five emergency diesel generator output circuit breakers was incorrectly coordinated with the fault current relay protection on the downstream breakers (91-202-06).
- d. For 120-Vac and 125-Vdc circuits, coordination calculations included several approved breaker/fuse configurations which may have resulted in incorrect coordination between upstream breakers and downstream fuses (91-202-07).

This is a Severity Level IV violation (Supplement 1).

RESPONSE TO VIOLATION

Admission or Denial of the Violation

GPC agrees that items b, c, and d stated above are valid deficiencies and occurred as described in the Notice of Violation. However, we believe item a does not constitute a violation. The rationale for our conclusion is provided in the response.

We emphasize that design control measures consistent with the requirements of 10 CFR Part 50, Appendix B, Criterion III are in place to provide for verifying or checking the adequacy of design. As noted in the Inspection Report, the NRC inspection team reviewed the procedures, processes, and

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guidelines governing design control measures, plant modifications, and design calculations. The inspection team concluded the following:

1. The design evaluation review and approval processes are adequate and comprehensive.
2. The engineering design and modification control processes are well proceduralized.
3. Design changes were reviewed and approved in accordance with established quality assurance/quality control controls.
4. GPC's procedures controlling documentation records and modification work are generally complete and comprehensive.

Additionally, the NRC inspection team indicated that Plant Hatch provides a very aggressive self-assessment effort.

The four deficiencies listed as examples in the Notice of Violation are discussed below:

EXAMPLE a:

Example a is not considered a violation of NRC requirements.

The existing degraded grid protection scheme at Plant Hatch is in accordance with GPC's response to the NRC Generic Letter (GL) dated June 2, 1977 concerning staff positions for degraded grid protection of station electric distribution system voltages. The GL addressed compliance with General Design Criterion 17. In GPC's response, a range for nominal offsite line voltages, which were evaluated and shown to adequately supply the emergency loads, was established. Currently, the expected voltage range for the offsite supply is evaluated on an annual basis to include transmission system load and configuration changes since the previous study. As part of the periodic offsite source voltage study, calculations based on maximum and minimum plant and system load conditions are performed to assure acceptable voltages for emergency systems. Also, load additions to the essential buses are evaluated prior to installation under the Design Change Request (DCR) process.

GPC's methodology of using minimum and maximum acceptable voltage ranges for the offsite power supply was reviewed and approved by the NRC. Specifically, GPC's system voltage study submitted to the NRC on October 9, 1980 used the minimum expected voltage for the offsite grid in establishing the adequacy of plant voltage levels. At that time, a minimum expected offsite source operating voltage of 98 percent of 230 kV was

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identified and established to ensure adequate bus voltages. To accommodate higher expected transmission system operating voltages, tap changes were made for the Station Auxiliary Transformers in 1986 and 1987. The present minimum expected offsite source operating voltage is 101.3 percent of 230 kV. Using the present minimum expected source voltage, tap connections, and load configurations, the minimum expected 1E system voltages are, generally, slightly higher than the minimum voltages submitted in 1980. Consequently, the level of undervoltage protection determined to be sufficient in 1980 has been maintained.

The existing degraded grid undervoltage relay setpoints were approved by the NRC in the Safety Evaluation Report (SER) dated May 6, 1982. The SER affirmed compliance with staff positions for a second level of undervoltage protection. GPC has consistently maintained compliance with the regulatory requirements as established and approved. However, GPC and the NRC staff are presently negotiating to identify a mutually acceptable method of further improving the level of degraded grid protection at Plant Hatch.

EXAMPLE b:

Example b is considered a violation and occurred as described in the Notice of Violation.

Reason for the Violation

The violation was caused by the lack of a design document specifying 1E transformer tap settings. As a result, transformer tap changes were implemented using Maintenance Work Orders (MWOs) instead of the DCR process. Consequently, formal 10 CFR 50.59 safety evaluations were not performed. Plant personnel and architect/engineer personnel failed to realize the tap changes represented design changes.

The transformer tap changes were implemented consistent with GPC's methodology of establishing minimum and maximum ranges for offsite voltages. Although formal 10 CFR 50.59 safety evaluations were not performed, engineering studies and calculations were performed to evaluate the voltage impact of plant load additions and safety-related transformer tap changes. The current transformer tap settings were changed in accordance with the recommendations resulting from the 1986 degraded grid voltage study. Currently, this study is performed on an annual basis. The study is performed in accordance with the requirements of the NRC Generic Letter of August 8, 1979 entitled, "Adequacy of Station Electric Distribution System Voltages."

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Corrective Steps Which Have Been Taken and the Results Achieved

In 1990 GPC identified the need to perform safety-related transformer tap changes as part of the DCR process. Consequently, on 2/21/91, drawings were issued to control changes to power transformer tap settings in accordance with the DCR process, thereby requiring the performance of formal 10 CFR 50.59 safety evaluations.

Corrective Steps Which Will Be Taken to Avoid Further Violations

Specific information for approximately 20 Class 1E low-voltage transformers has not been included in the new drawings. The necessary research and plant walkdowns will be performed to verify the remaining 1E transformer tap settings. Transformer inspections which do not require deenergization will be complete by 3/31/92. Examinations of transformers that require deenergization will be complete by the end of the next refueling outage for each unit. Drawings will be updated as necessary.

Date When Refueling Full Compliance Will Be Achieved

Full compliance for accessible transformer will be achieved by 3/31/92 when drawings will be issued. The remaining transformers will be included on the drawings by the next refueling outage. This will require the performance of 10 CFR 50.59 safety evaluations for future transformer tap changes.

EXAMPLE c:

Example c is considered a violation and occurred as described in the Notice of Violation.

Reason for the Violation

The violation was caused by personnel error. GPC protection engineering personnel did not sufficiently evaluate the coordination of the EDG overcurrent protection relays with the protective relays for the downstream circuit breakers. Additionally, GPC protection engineering personnel failed to identify the incorrect coordination during their review of the Appendix R Fire Protection Study which was performed in 1985. GPC personnel did not sufficiently evaluate the coordination scheme to ensure the required coordination was achieved.

As discussed during the inspection, the overcurrent relay protection on the five emergency diesel generator (EDG) output circuit breakers was functionally coordinated with the relay protection on the downstream

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breakers, with the exception of postulated faults such as a high impedance fault, a sluggish motor start with extended current draw near locked rotor current, or a continuous locked rotor condition on the associated 4160-V pump motors. These type scenarios are evaluated under single-failure analyses.

The single-failure criterion applicable to this issue is based on ANSI/ANS 52.1, "Nuclear Safety Criteria for the Design of Stationary Boiling Water Reactor Plants." Section 3.2.1 states:

The single failure criterion requires that the plant be capable of achieving (1) emergency core reactivity control, (2) emergency core and containment heat removal and (3) containment isolation, integrity, and atmospheric cleanup given an initiating occurrence plus an independent single failure of a nuclear safety related component in any one of the systems required to support directly or indirectly these three nuclear safety functions (i.e. only one single failure need to be assumed in the plant nuclear safety related equipment for any initiating occurrence).

ANSI/ANS 52.1 is related to the specific question as follows:

For a given initiating occurrence, GPC is required to ensure no single equipment failure will prevent adequate core cooling or adversely affect containment integrity. The failure is not specifically stated; therefore, the failure of any single piece of equipment must be considered credible. For Plant Hatch, one of the limiting single failures is the total loss of an EDG. The hypothetical loss of an EDG can be from any cause. An EDG failure may be initiated by several different sources; for example, from a start signal failure or a fault on the load side of a 4-kV breaker, or other component failures.

The loss of an EDG is an analyzed event. All Appendix K requirements are satisfied, and containment integrity is not violated. The key issue for single failure is that it may occur prior to, during (simultaneously), or subsequent to the initiating (accident) event. The scenario must be analyzed for the most severe chronological occurrence of events so the plant successfully achieves mitigation of the accident.

While the loss of an EDG due to less than fully adequate breaker coordination is an undesirable event, GPC maintains that such a scenario is within the licensing basis of the plant.

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Corrective Steps Which Have Been Taken and the Results Achieved

Design Change Requests 91-124 and 91-125 were implemented on 7/12/91 to revise the settings on the diesel generator output breakers to correctly coordinate the protective devices.

Corrective Steps Which Will Be Taken to Avoid Further Violations

No further corrective actions are required.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on 7/12/91 when DCRs 91-124 and 91-125 were implemented.

EXAMPLE d:

Example d is considered a violation and occurred as described in the Notice of Violation.

Reason for the Violation

The violation was caused by personnel error. Electrical calculation No. 87 (Bechtel), Revision 3, dated January 8, 1990, identifies various acceptable configurations between existing upstream circuit breakers and downstream fuses for 120-Vac and 125-Vdc control circuits. Although no use of this calculation to select new fuse/breaker combinations is believed to exist, the intended use of the coordination tables was not adequately defined, and could have been misinterpreted. This calculation is not a basis for selecting fuse/breaker combinations in circuits where coordination is mandatory (i.e., Appendix R).

Corrective Steps Which Have Been Taken and the Results Achieved

Electrical calculation No. 87 has been revised to clearly state its scope and purpose. The revision ensures that further reviews, if required, will be performed when undertaking coordination studies using this calculation.

Additionally, a review was performed during the inspection and it is believed that the area of concern (overlapping of trip curves at relatively high fault levels) does not apply to any actual plant circuits.

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Corrective Steps Which Will Be Taken to Avoid Further Violations

A review of the calculation will be performed to ensure it did not result in misapplications which cause an inappropriate level of coordination. This action will be complete by 3/31/92. Appropriate A/E personnel have been counseled regarding the need for correctly translating design information.

Date When Full Compliance Will Be Achieved

Full compliance was achieved on 10/30/91 when Electrical Calculation No. 87 was revised to more clearly state its scope and purpose.