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July 11, 1986

United States Nuclear Regulatory Commission
Region II
Suite 2900
101 Marietta Street, Northwest
Atlanta, Georgia 30323

File: X7BG03-M104
Log: GN-991

Reference: Vogtle Electric Generating Plant-Units 1 and 2; 50-424, 50-425;
Seismic Separation of Electrical Components;
Letter GN-894, dated May 2, 1986

Attention: Mr. J. Nelson Grace

In previous correspondence, Georgia Power Company indicated that the NRC would be informed of the results of the evaluation of this condition by July 11, 1986. Georgia Power Company has completed its evaluation and determined that a reportable condition as defined by the reporting criteria of Part 10 CFR 50.55(e) and Part 10 CFR 21 does exist. Based upon NRC guidance in NUREG-0302 Revision 1 and other NRC correspondence, Georgia Power Company is reporting this condition pursuant to the reporting requirements of Part 10 CFR 50.55(e). A summary of our evaluation is enclosed.

This response contains no proprietary information and may be placed in the NRC Public Document Room.

Yours truly,

D. O. Foster

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Enclosure

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EVALUATION OF A POTENTIALLY REPORTABLE CONDITION
SEISMIC SEPARATION OF ELECTRICAL COMPONENTS

Initial Report: On April 3, 1986, Mr. R. E. Folker, Vogtle Quality Assurance Engineer, informed Mr. E. F. Christnot of the USNRC-Region II of a potentially reportable condition concerning the seismic separation of electrical components. In subsequent correspondence, Georgia Power Company indicated that the NRC could expect to be informed of the results of the evaluation of this condition by July 11, 1986.

Background Information: Readiness Review Finding 6-32 identified a concern associated with the adequacy of the seismic separation provided between safety related electrical equipment and cable tray supports. The concern is that if insufficient seismic separation is provided, seismic interaction or impacts may occur. This interaction could affect the seismic qualification of the electrical equipment.

The electrical construction specification X3AR01 (section E8) was revised in November, 1984 to require a separation distance of 2 inches vertically and 2.5 inches horizontally be provided between electrical equipment and raceway supports. Readiness Review Finding 6-32 identified that 480V switchgear 1A305 was found to have a cable tray support installed above it with only a 1 inch vertical separation. This was in conflict with the revised construction specification criteria. A limited walkdown was performed and five additional violations of separation criteria were identified. A quality assurance audit report (AFR-855) identified four (4) additional violations of the separation criteria. A complete walkdown of the safety-related electrical equipment identified an additional five (5) supports that did not meet the requirements of the construction specification.

Readiness Review Finding 6-37 identified a concern associated with the adequacy of the seismic clearance provided between electrical equipment and other nearby equipment or walls. The finding identified that the seismic separation requirement of a 2 inch horizontal separation was only required for electrical panels in the main control room. Electrical equipment located in other areas of the plant may be located too close to each other.

Engineering Evaluation: Seismic impacts were not considered during the seismic qualification of electrical equipment. These impacts could cause relay contact chatter such that spurious energization or de-energization of the associated loads could occur.

For the case involving cable tray supports in Readiness Review Finding 6-32, the separation information in the deviation reports did not contain sufficient information to perform a detailed analysis. It is conservatively assumed that the impact between cable tray supports and electrical equipment could have prevented the proper functioning of the electrical equipment.

Readiness Review Finding 6-37 identified seven electrical panels that had sheet metal drip shields that extend beyond the edge of the

structural members. The drip shields could impact other equipment during a seismic event. These interactions have been analyzed and it has been determined that the resulting impact forces are significant. Since the equipment qualification tests did not include impact testing, it has been assumed that this condition could affect the operation of the equipment. Attached is Table 1 which identifies the distribution panels.

These conditions existed because the construction specifications that provided the separation criteria were inadequate. The specifications were provided by Bechtel Power Corporation and should have ensured that the seismic separation of all safety-related electrical equipment was properly maintained.

Conclusion: Georgia Power Company has completed its evaluation of this condition and determined that a reportable condition as defined by the reporting criteria of Part 10CFR50.55(e) and Part 10CFR21 does exist. Based upon guidance in NUREG-0302 Revision 1 concerning the duplicate reporting of an event, Georgia Power Company is reporting this event per the reporting criteria of Part 10CFR50.55(e).

Corrective Action: The discrepant supports have been modified to eliminate the separation concerns identified in the walkdowns for electrical equipment. As a result of this issue, construction procedures ED-T-02, "Raceway Installation" and ED-T-04, "Installation of Major Electrical Equipment" and the raceway "Information Book" were modified to provide additional guidance in the area of support/equipment clearance requirements to minimize the possiblity of separation discrepancies in the future.

To correct the separation problem for the panels discussed above, a change control package, B10278E, has been initiated to delete the drip shields from the top of the panels. It has been determined that removal of the drip shields will not jeopardize the operation of these panels.

In response to Readiness Review Finding 6-37, construction specification X3AR01, section E12, "Installation Procedures for Electrical Equipment" and section E2, "Station Service Equipment" were revised to clarify that the separation requirements of 2 inches applies for installation of all Class 1E electrical cabinets and panels.

This evaluation has considered only floor and wall mounted safety-related electrical equipment. The potential for other types of equipment to also have seismic separation concerns is being evaluated by the project as a part of the broadness review for Readiness Review Finding 22-F28 and is currently being tracked under PCW Action Item IB-1634. A formal procedure, which will be incorporated into the Project Reference Manual, is being developed for the conduct of a walkdown review.

Corrective actions are expected to be complete by August 1, 1986, with the incorporation of the above procedure into the Project Reference Manual. Any items found during subsequent walkdowns will be evaluated for reportability on a case by case basis.

TABLE 1

ELECTRICAL EQIPMENT	EQUIPMENT TAG NUMBER	STARTUP SYSTEM
120 VAC VITAL INSTRUMENT DISTRIBUTION PANELS		
1AY1A	1-1807-Q3-VI1	PQ
1CY1A	1-1807-Q3-VI3	PQ
1DY1B	1-1807-Q3-VI4	PQ
125 VDC DISTRIBUTION PANELS		
1AD11	1-1806-Q3-DA1	PK-02
1AD12	1-1806-Q3-DA2	PK-02
1CD11	1-1806-Q3-DC1	PK-02
1DD11	1-1806-Q3-DD1	PK-02