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TECHNICAL EVALUATION REPORT

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1--
EQUIPMENT CLASSIFICATION FOR ALL OTHER SAFETY-
RELATED COMPONENTS: VOGTLE-1/-2

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Prepared for the
U.S. NUCLEAR REGULATORY COMMISSION



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TECHNICAL EVALUATION REPORT

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1:
EQUIPMENT CLASSIFICATION FOR ALL OTHER
SAFETY-RELATED COMPONENTS--VOGTLE-1/-2

Docket Nos. 50-424/50-425

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ABSTRACT

This EG&G Idaho, Inc., report documents the review of the submittals from Unit Nos. 1 and 2 of the Vogtle Electric Generating Plant for conformance to Generic Letter 83-28, Item 2.2.1.

Docket Nos. 50-424/50-425

FOREWORD

This report is supplied as part of the program for evaluating licensee/applicant conformance to Generic Letter 83-28 "Required Actions Based on Generic Implications of Salem ATWS Events." This work is being conducted for the U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulation, Division of Engineering and System Technology, by EG&G Idaho, Inc., Electrical, Instrumentation, and Control Systems Evaluation Unit.

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CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1:
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SAFETY-RELATED COMPONENTS--VOGTLE-1/-2

1. INTRODUCTION

On February 25, 1983, both of the scram circuit breakers at Unit 1 of the Salem Nuclear Power Plant failed to open upon an automatic reactor trip signal from the reactor protection system. This incident was terminated manually by the operator about 30 seconds after the initiation of the automatic trip signal. The failure of the circuit breakers was determined to be related to the sticking of the undervoltage trip attachment. Prior to this incident, on February 22, 1983, at Unit 1 of the Salem Nuclear Power Plant, an automatic trip signal was generated based on steam generator low-low level during plant startup. In this case, the reactor was tripped manually by the operator almost coincidentally with the automatic trip.

Following these incidents, on February 28, 1983, the NRC Executive Director for Operations (EDO), directed the NRC staff to investigate and report on the generic implications of these occurrences at Unit 1 of the Salem Nuclear Power Plant. The results of the staff's inquiry into the generic implications of the Salem unit incidents are reported in NUREG-1000, "Generic Implications of the ATWS Events at the Salem Nuclear Power Plant." As a result of this investigation, the Commission (NRC) requested (by Generic Letter 83-28 dated July 8, 1983¹) all licensees of operating reactors, applicants for an operating license, and holders of construction permits to respond to the generic issues raised by the analyses of these two ATWS events.

This report is an evaluation of the responses submitted by the Georgia Power Company, the applicant for the Vogtle Electric Generating Plant, for Item 2.2.1 of Generic Letter 83-28. The documents reviewed as a part of this evaluation are listed in the references at the end of this report.

2. REVIEW CONTENT AND FORMAT

Item 2.2.1 of Generic Letter 83-28 requests the licensee or applicant to submit, for the staff review, a description of their programs for safety-related equipment classification including supporting information, in considerable detail, as indicated in the guideline section for each item within this report.

As previously indicated, each of the six items of Item 2.2.1 is evaluated in a separate section in which the guideline is presented; an evaluation of the licensee's/applicant's response is made; and conclusions about the programs of the licensee or applicant for safety-related equipment classification are drawn.

3. ITEM 2.2.1 - PROGRAM

3.1 Guideline

Licensee and applicants should confirm that an equipment classification program exists that provides assurance that all safety-related components are designated as safety-related on plant documentation and in the information handling system that controls safety-related activities. The purpose of this program is to ensure that personnel performing activities that affect such safety-related components are aware that they are working on safety-related components and are guided by safety-related procedures and constraints. Features of this program are evaluated in the remainder of this report.

3.2 Evaluation

The applicant for the Vogtle Electric Generating Plant responded to these requirements with submittals dated November 8, 1983,² May 20, 1985,³ and March 28, 1988.⁴ These submittals included information that describe the applicant's safety-related equipment classification program. In the review of the applicant's response to this item it was assumed that the information and documentation supporting this program is available for audit upon request.

The applicant states that all safety-related components and parts are classified as such in accordance with the "Project Reference Manual," Part C, Section 13. It also defines design criterion DC-1010. DC-1010 controls the project classification list that is located in the Final Safety Analysis Report (FSAR), Table 3.2.2-1.

The applicant states that the safety-related classification of components is annotated on the Q-list, the project classification list, equipment lists, P&ID's, procurement specifications, material control lists, specification control log, the safety analysis report, and other pertinent documents.

3.3 Conclusion

We have reviewed the applicant's information and find that the applicant's response is adequate in responding to this item and is acceptable.

4. ITEM 2.2.1.1 - IDENTIFICATION CRITERIA

4.1 Guideline

The applicant or licensee should confirm that their program used for equipment classification includes criteria used for identifying components as safety-related.

4.2 Evaluation

The applicant's response indicates that the criteria used to classify structures, systems, and components are contained in the Vogtle Electric Generating Plant Project Reference Manual. The applicant, while not listing the criteria, does state that the criteria conform with the guidance of Regulatory Guide 1.26 (Rev. 3), Activity Group Classifications and Standards for Electric and Radioactive-Water Containing Components of Nuclear Power Plants, and Regulatory Guide 1.29 (Rev. 3), Seismic Design Classification.

4.3 Conclusion

The applicant's response to this item is considered to be complete. Therefore, the applicant's response for this item is acceptable.

5. ITEM 2.2.1.2 - INFORMATION HANDLING SYSTEM

5.1 Guideline

The licensee or applicant should confirm that the program for equipment classification includes an information handling system that is used to identify safety-related components. The response should confirm that this information handling system includes a list of safety-related equipment and that procedures exist to govern its development and validation.

5.2 Evaluation

The applicant states that the information handling system consists of Table 3.2.2.1 of the FSAR, "Classification of Structure, Components, and Systems." An instrument index, an equipment index, and a valve index supplement and detail Table 3.2.2.1. The applicant provided a description of the procedures used in the development and validation of Table 3.2.2.1 and associated indices. The architect/engineer maintains singular control of these lists prior to operation. The nuclear operations department maintains singular control of these lists during plant operation.

5.3 Conclusion

The applicant's response to this item is considered to be complete. Therefore, the applicant's response for this item is acceptable.

6. ITEM 2.2.1.3 - USE OF EQUIPMENT CLASSIFICATION LISTING

6.1 Guideline

The licensee's or applicant's description should confirm that the program for equipment classification includes criteria and procedures that govern how station personnel use the equipment classification information handling system to determine that an activity is safety-related. The description should also include the procedures for maintenance, surveillance, parts replacement, and other activities defined in the introduction to 10 CFR 50, Appendix B, that apply to safety-related components.

6.2 Evaluation

The applicant states that plant administrative procedures direct station personnel to the instrument, equipment and valve indices to identify quality requirements, safety-related components, and to identify safety-related maintenance requests and purchase activities. These indices are designed and used as an aid to the use of FSAR Table 3.2.2.1.

6.3 Conclusion

We find that the applicant's description of plant administrative controls and procedures meets the requirements of this item. Therefore, the licensee's response for this item is acceptable.

7. ITEM 2.2.1.4 - MANAGEMENT CONTROLS

7.1 Guideline

The applicant or licensee should briefly describe the management controls that are used to verify that the procedures for the preparation, validation, and routine utilization of the information handling system have been and are being followed.

7.2 Evaluation

The applicant's response to this item states that quality assurance audits and reviews, both corporate staff and plant, periodically review all plant activities. On-site audits of record management and document control use vendor supplied information. The applicant also states that procedures control the use of the information handling system by architect engineering companies and that this use is also subject to quality assurance audits.

The applicant states that FSAR Table 3.2.2-1 and the related indices were prepared and validated by the architect/engineer. The architect/engineer's quality assurance department audited and controlled the development of the Vogtle equipment classification information handling system.

7.3 Conclusion

We find that the management controls used by the licensee assure that the information handling system is maintained, is current, and is used as intended. Therefore, the licensee's response for this item is acceptable.

8. ITEM 2.2.1.5 - DESIGN VERIFICATION AND PROCUREMENT

8.1 Guideline

The applicant's submittals should document that past usage demonstrates that appropriate design verification and qualification testing are specified for the procurement of safety-related components and parts. The specification should include qualification testing for the expected safety-service conditions and should provide support for the applicant's receipt of testing documentation to support the limits of life recommended by the supplier. If such documentation is not available, confirmation that the present program meets these requirements should be provided.

8.2 Evaluation

The applicant states that procurement specifications for safety-related components include qualification testing for the expected service conditions. Further, the applicant states that the testing documentation is reviewed to support the supplier recommended service life.

8.3 Conclusion

Although the applicant did not specify the design criteria applied to this item, we conclude that the applicant has addressed the concerns of this item. Therefore, the licensee's response for this item is considered acceptable.

9. ITEM 2.2.1.6 - "IMPORTANT TO SAFETY" COMPONENTS

9.1 Guideline

Generic Letter 83-28 states that the applicant's or licensee's equipment classification program should include (in addition to the safety-related components) a broader class of components designated as "Important to Safety." However, since the generic letter does not require the applicant to furnish this information as part of their response, this item will not be reviewed.

10. CONCLUSION

Based on our review of the applicant's response to the specific requirements of Item 2.2.1, we find that the information provided by the applicant to resolve these concerns meets the requirements of Generic Letter 83-28 and is acceptable. Item 2.2.1.6 was not reviewed as noted in Section 9.1.

11. REFERENCES

1. NRC Letter, D. G. Eisenhower to all Applicant's of Operating Reactors, Applicants for Operating License, and Holders of Construction Permits, "Required Actions Based on Generic Implications of Salem ATWS Events (Generic Letter 83-28)," July 8, 1983.
2. Letter, Georgia Power Company (D. O. Foster) to NRC (E. G. Adensam), "Generic Letter 83-28", November 8, 1983, Log: GN-276, File: K6BK10.
3. Letter, Georgia Power Company (J. A. Bailey) to NRC (E. G. Adensam), "Generic Letter 83-28", May 20, 1985, Log: GN-613, File: X6BK10.
4. Letter, Georgia Power Company (L. T. Gucwa) to NRC, "SER Open Item 5: Generic Letter 83-28," March 28, 1988, LL-4413,0852m, X7QJ17-V210.

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