

TECHNICAL EVALUATION REPORT

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1--
EQUIPMENT CLASSIFICATION FOR ALL OTHER SAFETY-RELATED
COMPONENTS: OCONEE-1, -2 AND -3

Docket Nos. 50-269/50-270/50-287

Alan C. Udy

Published July 1987

Idaho National Engineering Laboratory
EG&G Idaho, Inc.
Idaho Falls, Idaho 83415

Prepared for the
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555
Under DOE Contract No. DE-AC07-76ID01570
FIN No. D6001

8711100251 871104
PDR ADOCK 05000269
PDR

ABSTRACT

This EG&G Idaho, Inc., report provides a review of the submittals from the Oconee Nuclear Station for conformance to Generic Letter 83-28, Item 2.2.1.

Docket Nos. 50-269/50-270/50-287

TAC Nos. 53695/53696/53697

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 PWR Licensing-A, by EG&G Idaho, Inc., NRR and I&E Support Branch.

The U.S. Nuclear Regulatory Commission funded this work under the authorization B&R 20-19-10-11-3, FIN No. D6001.

Docket Nos. 50-269/50-270/50-287

TAC Nos. 53695/53696/53697

CONTENTS

ABSTRACT	ii
FOREWORD	iii
1. INTRODUCTION	1
2. REVIEW CONTENT AND FORMAT	2
3. ITEM 2.2.1 - PROGRAM	3
3.1 Guideline	3
3.2 Evaluation	3
3.3 Conclusion	3
4. ITEM 2.2.1.1 - IDENTIFICATION CRITERIA	4
4.1 Guideline	4
4.2 Evaluation	4
4.3 Conclusion	4
5. ITEM 2.2.1.2 - INFORMATION HANDLING SYSTEM	5
5.1 Guideline	5
5.2 Evaluation	5
5.3 Conclusion	5
6. ITEM 2.2.1.3 - USE OF EQUIPMENT CLASSIFICATION LISTING	6
6.1 Guideline	6
6.2 Evaluation	6
6.3 Conclusion	6
7. ITEM 2.2.1.4 - MANAGEMENT CONTROLS	7
7.1 Guideline	7
7.2 Evaluation	7
7.3 Conclusion	7
8. ITEM 2.2.1.5 - DESIGN VERIFICATION AND PROCUREMENT	8
8.1 Guideline	8
8.2 Evaluation	8
8.3 Conclusion	8
9. ITEM 2.2.1.6 - "IMPORTANT-TO-SAFETY" COMPONENTS	9
9.1 Guideline	9
10. CONCLUSION	10
11. REFERENCES	11

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1--
EQUIPMENT CLASSIFICATION FOR ALL OTHER SAFETY-RELATED
COMPONENTS: OCONEE-1, -2 AND -3

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 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 Duke Power Company, the licensee for the Oconee Nuclear Station, 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 sub-item within this report.

As previously indicated, each of the six sub-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

Licensees and applicants should confirm that an equipment classification program exists which provides assurance that all safety-related components are designated as safety-related on all plant documents, drawings and procedures and in the information handling system that is used in accomplishing safety-related activities, such as work orders for repair, maintenance and surveillance testing and orders for replacement parts. Licensee and applicant responses which address the features of this program are evaluated in the remainder of this report.

3.2 Evaluation

The licensee for the Oconee Nuclear Station responded to these requirements with a submittal dated November 4, 1983.² This response was revised on January 17, 1984.³ These submittals include information that describes the licensee's safety-related equipment classification program. In the review of the licensee's response to this item, it was assumed that the information and documentation supporting this program are available for audit upon request.

The licensee states that their "Oconee Nuclear Station Safety-related Structures, Systems and Components Manual" (the Station Manual), is the information handling system referred to. The licensee states that safety-related components are identified as such on their plant documents, drawings, Quality Standards Manual, operating manuals, operating and maintenance procedures, tests, work requests and standing work requests.

3.3 Conclusion

We have reviewed the licensee's information and, in general, find that the licensee's response is adequate.

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 licensee's response gives the criteria for identifying safety-related equipment and components. A component is considered safety-related if it is required to assure: (a) the integrity of the reactor coolant system pressure boundary, (b) the capability to achieve and maintain a safe shutdown, or (c) the capability to prevent or to mitigate the consequences of an accident which could result in potential offsite exposures. Additionally, the licensee has identified other considerations and guidance that are used in determining the safety-related status of structures, systems and components.

4.3 Conclusion

We find that the licensee's definition of criteria used in the identification of safety-related components meets the requirements of Item 2.2.1.1 and 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 which govern its development and validation.

5.2 Evaluation

The licensee states that the draft Station Manual (the equipment classification information handling system) was developed, verified and is used in accordance with written procedures and administrative controls. It also received an interdepartmental review to ensure completeness and accuracy. The licensee also defines the process used in revising the Station Manual. This is done in accordance with a procedure contained within the Licensing Section Manual.

5.3 Conclusion

We find that the information contained in the licensee's submittals is sufficient for us to conclude that the licensee's information handling system for equipment classification meets the guideline requirements. Therefore, the information provided by the licensee 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 their program for equipment classification includes criteria and procedures which govern how station personnel use the equipment classification information handling system to determine that an activity is safety-related and what procedures for maintenance, surveillance, parts replacement and other activities defined in the introduction to 10 CFR 50, Appendix B, apply to safety-related components.

6.2 Evaluation

The licensee's response provided a description of the station personnel's use of the Oconee Nuclear Station Quality Standards Manual for Structures, Systems and Components. This manual contains the equipment classification listings. A criteria checklist for the determination of the equipment classification was also included. This determines safety-related items. If an item is not shown to be non-safety-related, it is assumed to be safety-related. Documentation packages for the above listed activities (Section 6.1) receive an interdisciplinary (including quality assurance) review to determine that the proper procedures are used with safety-related activities.

6.3 Conclusion

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

7. ITEM 2.2.1.4 - MANAGEMENT CONTROLS

7.1 Guideline

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

7.2 Evaluation

The licensee's response states that management procedures and controls cover the utilization of the quality standards documents at each station. The Administrative Policy Manual for Nuclear Stations contains requirements for determining the safety-related status of an affected item. Each activity requires the determination and documentation of the safety status of the affected item and appropriate management approval is received in the documentation package. All documentation packages for activities affecting a safety-related structure, system, or component receive an interdisciplinary station review including the Quality Assurance Department.

7.3 Conclusion

The licensee's response to this item is considered to be complete and is acceptable.

8. ITEM 2.2.1.5 - DESIGN VERIFICATION AND PROCUREMENT

8.1 Guideline

The applicant's or licensee's submittal should document that past usage demonstrates that appropriate design verification and qualification testing is specified for the procurement of safety-related components and parts. The specifications should include qualification testing for expected safety service conditions and provide support for the applicant's/licensee'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 licensee's submittals address procurement activities, and state that procurement specifications for safety-related components require the appropriate design verification and qualification testing. The licensee addresses surveillance activities and preventive maintenance that verifies that components do not exceed their service life. The licensee states that replacement safety-related components and parts are purchased as a direct replacement item, whether from the original or an alternate vendor, or by use of an industry standard part number.

8.3 Conclusion

The licensee's response for this item is considered to be complete and is acceptable.

9. ITEM 2.2.1.6 - "IMPORTANT-TO-SAFETY" COMPONENTS

9.1 Guideline

Generic Letter 83-28 states that the licensee's or applicant'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 licensee or applicant to furnish this information as part of their response, review of this item will not be performed.

10. CONCLUSION

Based on our review of the licensee's response to the specific requirements of Item 2.2.1, we find that the information provided by the licensee to resolve the concerns of Items 2.2.1.1, 2.2.1.2, 2.2.1.3, 2.2.1.4 and 2.2.1.5 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 Licensees 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. Duke Power Company letter, H. B. Tucker to H. R. Denton, NRC, November 4, 1983.
3. Duke Power Company letter, H. B. Tucker to H. R. Denton, NRC, January 17, 1984.
4. Duke Power Company letter, H. B. Tucker to NRC, June 9, 1987.

NRC FORM 335 (2-84) NRCM 1102, 3201, 3202 BIBLIOGRAPHIC DATA SHEET SEE INSTRUCTIONS ON THE REVERSE		U.S. NUCLEAR REGULATORY COMMISSION		1. REPORT NUMBER (Assigned by TIDC, add Vol. No., if any) EGG-NTA-7332	
2. TITLE AND SUBTITLE CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1-- EQUIPMENT CLASSIFICATION FOR ALL OTHER SAFETY-RELATED COMPONENTS: OCONEE-1, -2, AND -3				3. LEAVE BLANK	
5. AUTHOR(S) Alan C. Udy				4. DATE REPORT COMPLETED MONTH: July YEAR: 1987	
7. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) EG&G Idaho, Inc. P. O. Box 1625 Idaho Falls, ID 83415				6. DATE REPORT ISSUED MONTH: July YEAR: 1987	
10. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code) Division of Engineering & System Technology Office of Nuclear Reactor Regulation U.S. Nuclear Regulatory Commission Washington, DC 20555				8. PROJECT/TASK/WORK UNIT NUMBER 9. FIN OR GRANT NUMBER D6001	
12. SUPPLEMENTARY NOTES				11a. TYPE OF REPORT b. PERIOD COVERED (Inclusive dates)	
13. ABSTRACT (200 words or less) <p>This EG&G Idaho, Inc., report provides a review of the submittals from the Duke Power Company regarding conformance to Generic Letter 83-28, Item 2.2.1 for Unit Nos. 1, 2, and 3 of the Oconee Nuclear Station.</p>					
14. DOCUMENT ANALYSIS & KEYWORDS/DESCRIPTORS d. IDENTIFIERS/OPEN-ENDED TERMS				15. AVAILABILITY STATEMENT Unlimited Distribution 16. SECURITY CLASSIFICATION (This page) Unclassified (This report) Unclassified 17. NUMBER OF PAGES 18. PRICE	