

SAFETY EVALUATION REPORT

PEACH BOTTOM ATOMIC POWER STATION, UNITS 2 AND 3

DOCKET NOS. 50-277/50-278

GENERIC LETTER 83-28, ITEM 2.2.1

EQUIPMENT CLASSIFICATION

PROGRAMS FOR ALL SAFETY-RELATED COMPONENTS

1.0 INTRODUCTION

Generic Letter 83-28 was issued by the NRC on July 8, 1983 to indicate actions to be taken by licensees and applicants based on the generic implications of the Salem ATWS events. Item 2.2.1 of that letter states that licensees and applicants shall describe in considerable detail their program for classifying all safety-related components other than RTS components as safety-related on plant documents and in information handling systems that are used to control plant activities that may affect these components. Specifically, the licensee/applicant's submittal was required to contain information describing (1) the criteria used to identify these components as safety-related; (2) the information handling system which identifies the components as safety-related; (3) the manner in which station personnel use this information handling system to control activities affecting these components; (4) management controls that are used to verify that the information handling system is prepared, maintained, validated, and used in accordance with approved procedures; and (5) design verification and qualification testing requirements that are part of the specifications for procurement of safety-related components.

The licensee for Peach Bottom Atomic Power Station, Units 2 and 3 submitted a response to Generic Letter 83-28, Item 2.2.1 in a submittal dated November 4, 1983. We have evaluated this response and find it to be acceptable.

2.0 EVALUATIONS AND CONCLUSIONS

In these sections the licensee's responses to the program and each of five sub-items are individually evaluated against guidelines developed by the staff and conclusions are drawn regarding their individual and collective acceptability.

1. Identification Criteria

Guideline: The licensee's response should describe the criteria used to identify safety-related equipment and components. (Item 2.2.1.1)

Evaluation:

The licensee states that equipment 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.

Conclusion:

The licensee's submittal meets the staff requirements for this item and is acceptable.

2. Information Handling System

Guideline: The licensee's response should confirm that the equipment classification program includes an information handling system that is used to identify safety-related equipment and components. Approved procedures which govern its development, maintenance, and validation should exist. (Item 2.2.1.2)

Evaluation:

The licensee states that their Q-list identifies safety-related equipment. The Q-list is maintained and controlled by Engineering and Research Department (now Nuclear Engineering) Procedures.

Conclusion:

The licensee's submittal meets the staff requirements for this item and is acceptable.

3. Use of Information Handling System

Guidelines: The licensee response should confirm that their equipment classification program includes criteria and procedures which govern the use of the information handling system to determine that an activity is safety-related and that safety-related procedures for maintenance, surveillance, parts replacement and other activities defined in the introduction to 10CFR50, Appendix B, are applied to safety related components. (Item 2.2.1.3)

Evaluation:

The licensee states that the Maintenance Request Form System determines whether activities are classified as safety-related or non-safety-related. The maintenance request forms are prepared and tracked by a computerized system which automatically enters the safety-related status on to the form. The computerized system is updated by direct access to the current Q-list.

Conclusion:

The licensee's submittal meets the staff requirements for this item and is acceptable.

4. Management Controls

Guideline: The licensee/applicant should confirm that management controls used to verify that the procedures for preparation, validation, and routine utilization of the information handling system have been and are being followed. (Item 2.2.1.4)

Evaluation:

The licensee's submittal describes the managerial controls that are applied to assure that the equipment classification information handling system has been properly prepared, that its contents have been validated, that it is being maintained current and that it is being used to determine equipment classification as intended. Surveillance and audits are performed by the Quality Assurance Program.

Conclusion:

The licensee's submittal meets the staff requirements for this item and is acceptable.

5. Design Verification and Procurement

Guideline: The licensee/applicant's response 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 licensee's receipt of testing documentation which supports 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. (Item 2.2.1.5)

Evaluation:

The licensee listed seven Engineering and Research Department (now Nuclear Engineering) Procedures that verify the appropriate use of replacement parts and insure the technical and quality requirements, including documentation, verification of design capability and evidence of testing, are included in the purchase specifications. The licensee included a brief overall description of each procedure.

Conclusion:

The licensee's submittal meets the staff requirements for this item and is acceptable.

6. "Important To Safety" Comments

Guideline: Generic Letter 83-28 states that licensee/applicant equipment classification programs 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 licensee/applicant to furnish this information as part of their response, staff review of this sub-item will not be performed. (Item 2.2.1.6)

7. Program

Guideline:

Licensees/applicants should confirm that an equipment classification program exists which provides assurance that all safety-related components are designated as safety-related on plant documents such as drawings, procedures, system descriptions, test and maintenance instructions, operating procedures, and information handling systems so that personnel who perform 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. (Item 2.2.1)

Evaluation:

The licensee's response to these requirements was contained in a submittal dated November 4, 1983. The submittal describes the licensee's program for identifying and classifying safety-related equipment which meets the staff requirements as indicated in the preceding sub-item evaluations.

Conclusion:

We conclude that the licensee's program addresses the staff concerns regarding equipment classification and is acceptable.

3.0 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. Philadelphia Electric Company letter, S. L. Daltroff to Darrell G. Eisenhower, NRC, November 4, 1983.

TECHNICAL EVALUATION REPORT

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1,
EQUIPMENT CLASSIFICATION (ALL OTHER SAFETY-RELATED COMPONENTS),
PEACH BOTTOM -2 AND -3

Docket Nos. 50-277/50-278

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ABSTRACT

This EG&G Idaho, Inc., report provides a review of the submittal for Unit Nos. 2 and 3 of the Peach Bottom Atomic Power Station on conformance to Generic Letter 83-28, Item 2.2.1.

Docket Nos. 50-277/50-278

TAC Nos. 53700/53701

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.

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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 stated, 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 concerning the acceptability of the program of the licensee or applicant are drawn.

CONFORMANCE TO GENERIC LETTER 83-28, ITEM 2.2.1,
EQUIPMENT CLASSIFICATION (ALL OTHER SAFETY-RELATED COMPONENTS),
PEACH BOTTOM -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 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 response submitted by the Philadelphia Electric Company, the licensee for the Peach Bottom Atomic Power Station, for Item 2.2.1 of Generic Letter 83-28. The document reviewed as a part of this evaluation is listed in the references at the end of the report.

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 Peach Bottom Atomic Power Station responded to these requirements with a submittal dated November 4, 1983.² This submittal included information that describes their 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 is available for audit upon request.

The licensee states that the information source used to identify safety-related parts and components is their Q-list. The submittal states that the Q-list is the single controlling document that identifies safety-related structures, systems and components.

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. The licensee states that these criteria are in conformance with the 10 CFR 50, Appendix B, requirements.

4.3 Conclusion

We find that the criteria used in the identification of safety-related components meets the requirements of Item 2.2.1.1 and are 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 Q-list identifies the safety-related components. This list is verified by the Mechanical Project Engineer.

The licensee's description indicates that the Q-list originated with the Architect/Engineer, and includes the methods used from the time the Q-list was turned over to the licensee for development and validation; the process by which new safety-related items are entered; how changes in classification are made, how listed items are verified; how unauthorized changes are prevented; and how the Q-list is maintained and distributed to users as a single, official, consistent and unambiguous document.

The Q-list is maintained and controlled by Engineering and Research Department Procedure (ERDP) 3.2. Deletions from the Q-list are made in accordance with ERDP 3.3. The Q-list amendments and revisions are provided to users with a return receipt requirement. The return receipts are logged by the Mechanical Project Engineer, thus assuring a single, official, consistent and unambiguous document.

5.3 Conclusion

We find that the information contained in the licensee's submittal 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 states that the Maintenance Request Form (MRF) system determines whether activities are classified as safety-related or non-safety-related. This system has been updated to a computer-based Computerized History and Maintenance Planning System (CHAMPS), which automates MRF preparation and tracking. The safety-related status of structures, systems, components and parts is entered onto the MRF by the CHAMPS. The CHAMPS is updated by direct access to the current Q-list.

The licensee has described plant administrative controls and procedures that govern maintenance, modification and procurement activities. These controls assure that the Q-list status of components and systems is known before any maintenance, testing, design changes, engineering support, setpoint changes or special tests or studies are initiated.

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 submittal describes the managerial controls that are applied to assure that the equipment classification information handling system has been properly prepared, that its contents have been validated, that it is being maintained current and that it is being used to determine equipment classification as intended. These controls are maintained by the Engineering and Research Department management and are operated through the Mechanical Project Engineer. Surveillance and audits are performed by the Quality Assurance Program. Checks and balances within the Electric Production Department Quality Assurance Division audit Quality Assurance departmental procedures, audits and surveillances, in addition to audits of plant procedures and of the Maintenance Request Form System.

7.3 Conclusion

We find that the licensee's description meets the requirements of this item and is, therefore, 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 lists seven Engineering and Research Department Procedures (ERDP) that verify the appropriate use of replacement parts and insure the technical and quality requirements, including documentation, verification of design capability and evidence of testing, are included in the purchase specifications. The procedures listed are ERDP 3.4, 4.4, 4.5, 4.6, 6.2, 6.3, and 7.1. The licensee included a brief overall description of each procedure.

8.3 Conclusion

We consider the licensee's response for this item to be complete. The information provided address the concerns of this item 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, Equipment Classification Program for All Other Safety-Related Components, 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 meet 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. Philadelphia Electric Company letter, S. L. Daltroff to D. G. Eisenhower, NRC, November 4, 1983.

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