

APR 6 1976

Docket No. 50-270  
and 50-287

Duke Power Company  
ATTN: Mr. William O. Parker, Jr.  
Vice President - Steam Production  
422 South Church Street  
P. O. Box 2178  
Charlotte, North Carolina 28242

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ACRS (16)

Gentlemen:

The enclosure to this letter identifies additional information that we require for our review of the ECCS analysis for Oconee Units 2 and 3. If portions of the information requested have been provided in earlier submittals and are on the docket, a reference to those submittals, specifying the areas involved, will be acceptable.

Please respond to this request for additional information within 30 days of receipt of this letter.

Sincerely,

Original signed by

Robert A. Purple, Chief  
Operating Reactors Branch #1  
Division of Operating Reactors

Enclosure:  
Request for Additional  
Information

cc w/encl:  
See next page

OFFICE ➤	DOR:ORB-1	DOR:ORB-1				
XEROX NAME ➤	GZech:esp	RAPurple				
DATE ➤	4/1/76	4/1/76				

April, 1976

cc: Mr. William L. Porter  
Duke Power Company  
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Charlotte, North Carolina 28242

Mr. Troy B. Conner  
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1747 Pennsylvania Avenue, NW  
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Oconee Public Library  
201 South Spring Street  
Walhalla, South Carolina 29691

GENERIC INFORMATION REQUEST FOR REVIEW OF ECCS

IN THE ELECTRICAL, INSTRUMENTATION AND CONTROLS AREAS

The Acceptance Criteria for Emergency Core Cooling Systems for Light Water Nuclear Power Reactors, 10 CFR Part 50.46, requires that an analysis of possible failure modes of ECCS equipment and of their effects on ECCS performance be performed. This analysis should demonstrate that your ECCS and supporting subsystems meet the single failure criterion. We require that documentation of this analysis be provided in sufficient detail to enable the staff to (1) verify that the analysis demonstrates that the ECCS and supporting subsystems meet the single failure criterion as defined in IEEE Std 279-1971, and (2) determine the acceptability and verify the implementation of any proposed design modification required as a result of your analysis. Therefore, we require that the following information be submitted to support the single failure analysis of the ECCS and supporting subsystems:

1. Describe the design of the ECCS actuation system. Identify any non-conformance of this design with the single failure requirements of IEEE Std 279-1971. Describe any changes proposed for meeting these requirements.
2. Describe the design of the onsite emergency power system, a-c and d-c. Identify any non-conformance of this design with the single failure requirements of IEEE Std 279-1971. Describe any changes proposed for meeting these requirements.
3. Identify all the electrical equipment required for the ECCS and supporting subsystems to enable performance of the ECCS safety function. Define the qualification status (ability to withstand the design basis seismic and environmental conditions) of this equipment, and the basis for such qualification, to provide reasonable assurance that the equipment will be capable of performing its safety function. Describe any proposed design modifications, analyses, or test programs for meeting the environmental and seismic qualification requirements.
4. Identify all electrical equipment, both safety and non-safety, that may become submerged as a result of a LOCA. For all such equipment that is not qualified for service in such an environment, provide an analysis to determine the following: (1) the safety significance of the failure of the equipment (e.g., spurious operation, loss of function, loss of accident/post-accident monitoring, etc.) as a result of flooding, (2) the effects of Class IE electrical power sources serving this equipment as a result of such failures, and (3) the proposed design changes resulting from your analysis. Your response to item (2) should specifically address breaker and fuse coordination and the isolation capabilities of this aspect of your design.

5. Identify any single electrically operated fluid system component, including manually-controlled electrically-operated valves, whose failure could result in loss of capability of the ECCS to perform its safety function. Failure in both the "fail to function" sense and in the "undesirable function" sense should be considered, and this should apply even though the component may not be required to function in a given safety operational sequence.
6. With regard to the equipment identified in item (5), provide a detailed description of any proposed design changes deemed necessary by your analysis for meeting the single failure criterion. Your response should specifically address but should not be limited to changes made to meet the single failure criterion by conformance to Branch Technical Position EICSB 18, "Application of the Single Failure Criterion to Manually-Controlled Electrically-Operated Valves", of Appendix 7A of the Regulatory Standard Review Plan. This position establishes the acceptability of disconnecting power to the electrical components of a fluid system as one means of meeting the single failure criterion.
7. Identify any electrical interlocks between redundant portions of the ECCS and supporting subsystems. Define the consequence of failure of any interlock on the capability of the ECCS to perform its safety function. Describe any proposed design modifications resulting from this review.
8. Provide the electrical and physical separation criteria for your design of redundant safety equipment and functions. Include the features in your design that minimize the vulnerability of the ECCS and supporting subsystems to common failure modes.
9. Provide the following drawings for the ECCS and supporting subsystems:
  - a. One Line Diagram of the Onsite AC Power Distribution System.
  - b. One Line Diagram of the DC Power Distribution System.
  - c. One Line Diagram of the Vital Instrument Power Distribution System.