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U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

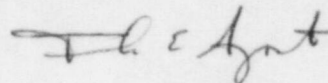
- References:
- 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-432
 - 2) Fermi 2
Final Safety Analysis Report
Amendment No. 33
 - 3) NRC to Detroit Edison Letter dated
December 5, 1986 regarding TMI Action
Plan Item II.K.3.28, "Qualification of
ADS Accumulators" (NUREG-0737)

Subject: Additional Information Related to TMI Action
Plan Item II.K.3.28, "Qualification
of ADS Accumulators" (NUREG-0737)

In response to your request for information contained in
Reference 3) above, enclosed please find additional
itemized information on the ADS Accumulators.

If you have any questions, please contact Mr. Girija
Shukla at (313) 586-4072.

Sincerely,



Attachment

cc: Mr. E. Greenman
Mr. W. G. Rogers
Mr. J. J. Stefano

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ATTACHMENT

Additional Information on ADS Accumulators
Detroit Edison Response to NRC Questions

1) Question

Based on the requirements of NUREG-0737 Item II.K.3.28, it is necessary to demonstrate that the ADS valves, accumulators, and associated equipment and instrumentation meet the requirements specified in the plant FSAR and are capable of performing their functions during and following exposure to hostile environments, taking no credit for non-safety-related equipment or instrumentation. Additionally, air (or nitrogen) leakage through the valves must be accounted for to assure that enough inventory of compressed gas is available to cycle the ADS valves. If this cannot be demonstrated, it must be shown that the accumulator design is still acceptable. Since this system is a part of the emergency core cooling system, it must still perform its function for the long-term period of 100 days following an accident.

You are requested to address in detail (a) how you meet this long-term capability requirement of 100 days following an accident or (b) the justification as to why a shorter time frame is sufficient long-term capability for your plant, or (c) provide a commitment and schedule for upgrading to the 100 day long-term capability requirement.

Response

The ADS valve accumulators and associated equipment are designed to meet the requirements specified in the FSAR. Consideration of leakage from the accumulators and valve operators has been given in the sizing of the accumulators. The accumulators are not designed to meet the long term capability requirement of 100 days following an accident. However, a fully qualified pneumatic supply system, backed up by a qualified nitrogen bottle connection and the safety related non interruptible control air system, has been provided to the ADS accumulators to meet this criteria.

2) Question

Define the number of times the ADS pneumatically controlled valve is capable of cycling using only the accumulator inventory at atmospheric pressure and at a specified percent (i.e., 70%) of drywell pressure, and the length of time these accumulators are capable of performing their function following an accident.

Response

Each ADS accumulator has sufficient inventory to allow for five valve operations. The accumulators and the backup systems are designed to perform their required function during and following an accident.

3) Question

Describe the ADS accumulator system design and operation (e.g., trains, air supply, capacity, alarms and instrumentation and their location, etc.)

Response

ADS accumulator system design and operational details are given in the EF2 FSAR sections 5.2.2.2.3 and 6.3.2.2.2.

4) Question

Define the basis for the allowable leakage criteria for the ADS accumulator system (e.g., boundary conditions, environmental and seismic parameters, operator interface, margin, etc.).

Response

No allowable leakage criteria is used for the ADS Accumulator system, however, normal leakage from the ADS accumulator system is negligibly small, 0.016 scfm or 0.08 percent of supply per minute, and the accumulators are designed to account for such leakage.

5) Question

What margin is in the allowable leakage criteria to account for possible increase in leakage in the ADS accumulator system resulting from effects of a harsh environment and/or a seismic event?

Response

No margin has been considered since no allowable leakage criteria is used for the ADS accumulator system.

6) Question

A statement that test and/or analysis performed verified that a harsh environment and/or seismic event would not increase the leakage rate in the ADS accumulator system.

Response

The ADS accumulator system has been analyzed to be capable of performing its design function during and following exposure to a harsh environment and/or a seismic event.

7) Question

A statement that verifies that no credit was taken for non-safety-related equipment and instrumentation when establishing the allowable leakage criteria for the ADS accumulator system.

Response

No credit has been taken for non-safety related equipment and instrumentation to account for any leakage.

8) Question

Provide a concise description of the tests performed on the ADS accumulator system, and backup, and their frequency.

Response

Please see response to Question 9)

9) Question

Provide a concise description of the surveillance performed, and how frequent, on alarms and instrumentation associated with the ADS accumulator system and backup system.

Response

A channel functional test is performed every thirty-one days on the low pressure alarm for the pneumatic supply to the ADS accumulators and a system functional test is performed once per 18 months. Both tests are required by section 4.5.1.d of the Plant Technical Specifications.

10) Question

Provide a statement that confirms that the ADS accumulator system, backup system and associated equipment and control circuitry, are seismically qualified.

Response

The ADS accumulator system, backup system, and associated equipment are designed to function during and/or after a seismic event.

11) Question

Provide a statement that confirms that the ADS accumulator system, backup system, and associated equipment and control circuitry are environmentally qualified for conditions associated with normal operation, maintenance, testing, and postulated accidents.

Response

The ADS accumulator system, backup system, and associated equipment and control are environmentally qualified.

12) Question

Provide a statement verifying that the ADS valves, accumulators, backup system, associated equipment and instrumentation are capable of performing their function during and following an accident situation while taking no credit for non-safety-related equipment and instrumentation.

Response

The ADS valves, accumulators, backup system, and associated equipment and instrumentation do not take credit for non-safety related equipment and instrumentation for performing their function during or following an accident.

13) Question

Provide excerpts from the plants technical specification verifying that they specify the following:

ADS leak test frequency.

Allowable leakage rate.

Actions to be taken, in a specified time frame should the leakage rate be exceeded.

Response:

Because of the additional backup system available to the ADS accumulators, the Plant Technical Specifications do not include the requirement specified in this question.

14) Question

Provide a concise description of the design and operation of the backup system and confirm that it will meet the overall requirement of the ADS system following an accident.

Response

The description of the design and operation of the backup system is given in the EF2 FSAR section 5.2.2.2.3.