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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 22 1980

Docket Nos. 50-416
and 50-417

Mr. M. L. Stampley, Vice President
Production and Engineering
Mississippi Power and Light Company
P. O. Box 1640
Jackson, Mississippi 39205

Dear Mr. Stampley:

SUBJECT: REQUESTS FOR ADDITIONAL INFORMATION
(Grand Gulf Nuclear Station, Units 1 and 2)

As a result of our review of the information contained in the Final Safety Analysis Report for the Grand Gulf Nuclear Station, Units 1 and 2, we have developed the enclosed requests for additional information. Included are questions from the Instrumentation and Control Branch concerning Sections 7.6 and 7.7.

We request that you amend your Final Safety Analysis Report to reflect your responses to the enclosed requests as soon as possible, and to inform the Licensing Project Manager, Thomas C. Houghton, of the date by which you intend to respond.

Please contact us if you desire any discussion or clarification of the enclosed requests.

Sincerely,

Robert L. Baer

Robert L. Baer, Chief
Light Water Reactors Branch No. 2
Division of Project Management

Enclosure:
Requests for Additional
Information

ccs w/enclosure:
See next page

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GRAND GULF FSAR SECTIONS 7.6 AND 7.7 QUESTIONS

Q031.78 (7.6.1.1) (7.7.1.2) The discussion of the refueling interlocks in Section 7.6.1.1 is incomplete as follows:

1) Section 7.6.1.1.2 indicates that the interlock is fail-safe for the movement of control rods but does not address the effect on the refueling platform operation.

2) Section 7.6.1.1.3.2 states that the limit of a single rod being withdrawn is implemented by disallowing the selection of a different rod once the "all rods in" signal disappears. It is not clear how the ganged rod withdrawal described in Section 7.7.1.2 is circumvented by this interlock.

3) Section 7.6.1.1.3.6 states that "Separation is provided, to a degree, for two of the three interlocks." The two interlocks involving the control rod operation are identified as having two separate channels, implying that the interlocks for the refueling platform are single channel.

4) Even though refueling operations are the means by which the core reactivity is restored, no mention is made of any interlocks that ensure that the core reactivity is adequately monitored during refueling (nor is there reference to the mechanisms used to ensure refueling with suitable fuel).

Revise the FSAR to more clearly identify the degree to which the interlocks are single failure proof. Justify the exclusion of flux monitoring instruments from the interlocks on the operation

of the refueling platform and indicate how compliance with GDCs 10, 16, and 27 are maintained and/or re-established following refueling.

Q031.79 (7.6.1.3) (Drawings E12-1050 E21-1090)

Sections 7.6.1.3.3.1 and 7.6.1.3.3.4 state that the recirculation suction valves have "independent and diverse interlocks" to prevent the valves from opening when system pressure is high. Identify the diverse method of signalling high system pressure. The elementary diagrams only show high area temperature, low reactor water level and high reactor pressure as interlocks on the valves. The diagrams show that the recirculation discharge valve is operated from the same logic as the suction valve. In addition, the order in which the statements in Section 7.6.1.3.3.1 are made makes it unclear as to whether the last sentence of the first paragraph applies to all the valves or only to the recirculation suction valves. Revise the FSAR as necessary to clarify these two points.

Q031.80 (7.6.2.4)

Revise the analysis for compliance with GDC 29 to address the concern of GDC 29 that the system will perform with reliability for anticipated operational occurrences. An instrument that only functioned one time out of ten could still meet your interpretation.

Q031.81 (7.6.1.5) (7.6.2.5)

The presentations in Sections 7.6.1.5.3.1.2 and 7.6.2.5.1 provide a questionable explanation of how the SRMs respond to reactivity changes. This in turn makes the analysis for

compliance to design requirements questionable. Revise FSAR to address the following specific points.

1) Justify the claim that the SRMs are designed to meet the single failure criterion in light of your statement that the SRM channels are not redundant.
2) Provide documentation to support the contention that one "section" of the core can independently be on a 20-second period (Section 7.6.2.5.1).
3) Indicate whether the redundancy/single failure relationship of the SRMs is applicable to the IRMs.

Q031.82 (7.6.2.5) (F7.6-14) Revise Figure 7.6-14, or provide an additional figure, to show the APRM response to full withdrawal of a control rod at rated power stated in Section 7.6.2.5.4.1.

Q031.83 (7.6.1.6) (7.6.1.7) (7.6.2.6) (7.6.2.7) (T7.1-3) The rod block monitor and the rod pattern control system are the parts of the rod control and information system that are identified as falling into the "all other systems required for safety" category. Both Sections 7.6.1.6 and 7.6.1.7 state that the rod block monitor is the mechanism by which the restrictions on rod motion, generated by the rod pattern control system, are implemented. Amend your FSAR to address all the safety criteria in Table 7.1-3 that are identified as applicable to RCIS. The criteria should be addressed for both the REM and RPCS.

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Q031.84 (7.6.1.8) (7.6.2.8) (T7.6-8) (Drawing C71-1050)

The equipment design section of the recirculation pump trip contains a number of errors as follows:

1) It refers to Figure 7.2-7 for initiating circuits and to Figure 7.2.-3 for logic [illegible]nt while each figure actually shows initiation and logic for one type of valve (Figure 7.2-3 is for control valves and Figure 7.2.7 is for stop valves).

2) The low power automatic bypass of the trip shown on Drawing C71-1050 is not discussed in the design basis nor addressed in the analysis (IEEE 279, paragraph 4.12).

3) Sections 7.6.1.8.3.2 and 7.6.1.8.5 are affected by the bypass in 2) above.

4) Figure 7.2-1 does not show the normal condition of sensors and logic contrary to statement in Section 7.6.1.8.5.1.

5) The RPT (ATWS) shown on Drawing B33-1030 is not discussed in this or any other part of Section 7.

6) The previously noted (031.56) disparity between the FSAR and system drawings applies to Section 7.6.1.8.6 b. and T7.6-8.

Revise the FSAR and/or the drawings to provide an accurate and complete description and analysis of the RPT system.

Q031.85 (7.6.2.10) (7.5)

The analysis for requirement 4.20 of IEEE 279 for the Component Cooling Water (CCW) merely refers to Section 7.5. Since Section 7.5 does not identify any CCW readouts as being part of the SPDI, amend the appropriate section to resolve the discrepancy.

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Q031.86 (7.6.1.11) Cite the reference that establishes that diversity is unequivocally not required for systems that are in constant operation. Also, describe the protective action taken by the operator to "prevent the addition of steam to high-temperature pool water."

Q031.87 (7.6.1.12) The interpretation of diversity in Section 7.6.1.12.6 is unacceptable; amend your FSAR to delete any reference to manual initiation as a diverse protective action.

Q031.88 (7.7.1.3) (7.7.2.3) (7.4.1.3) (7.4.2.2) (4.6) (3.1) Sections 4.6 and 7.4 state that the standby liquid control system is the second reactivity control system required by GDC 26. Section 3.1 states that the recirculation flow control system (RFCS) is the second reactivity control system required by GDC 26, and Section 7.7 implies that the RFCS is the second system through the statements made (in 7.7.2.3) in the analysis for compliance with IEEE 279 and GDC 26. Revise your FSAR to indicate how you comply with GDC 26.