



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

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DEC 19 1973

Docket Nos. 50-416/417

R. C. DeYoung, Assistant Director for Light Water Reactors Group 1, L

DRAFT SAFETY EVALUATION REPORT - CONTAINMENT SYSTEMS - GRAND GULF NUCLEAR STATION, UNITS 1 & 2

Plant Name: Grand Gulf, Units 1 & 2
Docket Nos.: 50-416/417
Licensing Stage: CP
NSSS Supplier: General Electric
Architect Engineer: Bechtel
Containment Type: Mark III
Responsible Branch & Project Manager: LWR #1-2; G. Owsley
Requested Completion Date: December 10, 1973
Applicant's Response Date: N/S
Review Status: Incomplete

Enclosed is the draft Safety Evaluation Report from the Containment Systems Branch for the Grand Gulf Nuclear Station, Units 1 & 2. Our review is based on the applicable sections of the PSAR and Amendments 1 through 16.

As noted in the enclosed draft Safety Evaluation, the following items are identified as requiring resolution that is expected to occur prior to issuance of the construction permit and will be reported in a supplement to the Safety Evaluation.

1. Our consultants (ANC) have advised us that the reactor blowdown rates used by GE in calculating the Mark III containment pressure response may not be conservative with respect to predicting short-term blowdown rates; i.e., less than one second. Consequently, we cannot conclude on the adequacy of the drywell and subcompartment design pressures at this time. We plan to meet with the applicant and GE to discuss this matter which could ultimately result in our requiring larger margins than the proposed 30%. (Section 6.2.1.2 and 6.2.1.5)
2. The currently proposed design of the containment spray system needs to be modified as discussed with GE. We have met with GE on a generic basis and believe that proposed modifications will result in an acceptable system; i.e., the RHR pumps presently used for both ECCS and containment spray be automatically actuated for

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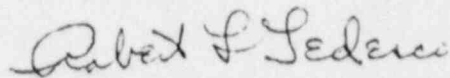
containment spray at 10 minutes following the accident. This approach appears acceptable to us; however, we are awaiting receipt of design aspects for this modification. Pending receipt of this information, and completion of our review we will address this matter in a supplement. (Section 6.2.1.6)

3. The applicant has been advised that a full-pressure leakage test of the drywell must be performed prior to plant start-up and that low pressure leakage tests must be performed periodically thereafter. The applicant needs to discuss the details of this testing. (Section 6.2.1.6)
4. The design of the secondary containment and associated systems is not complete at this time. The applicant has stated that this information will be submitted in a future amendment. (Section 6.2.3)
5. The proposed design of the drywell vacuum relief system is not acceptable; i.e., the absence of diversity for isolation. Either check valves should be installed in each of the vacuum relief lines or an equivalent means to prevent inadvertent bypassing of the suppression pool. This matter will be reviewed in conjunction with EICSB. (Section 6.2.1.3)
6. We will require automatic actuation of the hydrogen recirculation system. The initiation mode and associated interlocks have not been resolved. This matter will be reviewed with EICSB. (Section 6.2.5)
7. GE has promised us additional information concerning a detailed description and schedule of the ongoing test program, effects of non-uniform pressure loads and a historical summary on pressure suppression testing and development. This information is due on or about December 21, 1973. In addition, the mechanical forces that may be generated by pool dynamics have not been covered by us. The Engineering group should review this design area. (Section 6.2.1.2)

The full-scale Mark III test program is not complete at this time. We believe that our review for purposes of a construction permit is

DEC 19 1973

reasonably complete without these test data; however, Item 1 above must be resolved at this time. We plan to continue our review of the test program and results as an ongoing effort generic to the Mark III concept.



Robert L. Tedesco, Assistant Director
for Containment Safety
Directorate of Licensing

Enclosure:
As stated

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