



R. Cudlin

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

July 13, 1973

Docket Nos. 50-416/417

Voss A. Moore, Assistant Director for Boiling Water Reactors, L

REQUEST FOR ADDITIONAL INFORMATION FOR GRAND GULF NUCLEAR STATION,
UNITS 1 & 2

Plant Name: Grand Gulf, Units 1 & 2
Licensing Stage: CP
Docket Numbers: 50-416/417
NSSS: General Electric
Architect Engineer: Bechtel
Responsible Branch & Project Manager: BWR #1: G. Owsley
Requested Completion Date: None
Applicant's Response Date: ASAP
Review Status: Incomplete

The enclosed question list requesting additional information for the construction permit review for Grand Gulf 1 & 2 has been prepared by the Containment Systems Branch as a result of a meeting with Mississippi Power and Light, General Electric, and Bechtel in San Jose on June 26 and 27, 1973. In the course of the meeting the following issues were identified which require additional analyses by the applicant:

1. The capability of the plant to start the hydrogen recirculation system at about 10 minutes following a LOCA.
2. The capability of the plant to tolerate bypass leakage areas greater than that currently documented in the PSAR (i.e., 0.043 ft²).

During the meeting the applicant requested that our concerns and specific questions in these areas be formally requested. The attached question list is consistent with that request.

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

Enclosure:
As stated

cc: w/o encl. w/encl.
A. Giambusso J. M. Hendrie W. Butler G. Lainas *R. Cudlin*
W. McDonald S. H. Hanauer G. Owsley J. Glynn *→*

REQUEST FOR ADDITIONAL INFORMATION
GRAND GULF NUCLEAR STATION, UNITS 1 & 2
DOCKET NOS. 50-416/417

1. Provide the results of an analysis of the plant's capability to allow initiation of the hydrogen recirculation system at 10 minutes following a loss-of-coolant accident. Define the spectrum of primary system break sizes for which this capability may exist and discuss the specific limitations which determine the unacceptable break ranges. As a minimum, the following possible limitations should be addressed:

- a. containment spray heat capacity
- b. RHR system interlocks
- c. capability of the recirculation system to effectively mix the drywell and containment atmospheres considering the evolution rate of hydrogen due to metal-water reaction
- d. interlocks on the recirculation system valves
- e. requirements for operator action

Discuss the acceptability of not having early recirculation capability for certain primary system break sizes.

2. Discuss the process parameters which are monitored and available to the operator and the general operating procedures which he will follow in making the decision to initiate the hydrogen recirculation system. Describe the manual actions which must be performed by the operator to start recirculation.

3. Provide an analysis of the containment spray systems heat removal capability. Discuss the assumptions and justifications for the assumptions used in the analysis.
 4. Provide sensitivity analyses which relate the containment's bypass capability, for small primary system breaks, to the following means of mitigating or terminating bypass leakage:
 - a. containment sprays
 - b. plant shutdown times
 - c. containment heat sinks (specify the sources of heat sinks and the manner by which heat sink effectiveness was determined)
 - d. any other means for mitigating the effects of bypassing
- Considering the above analyses, summarize the containment capability to withstand the effects of direct bypass of the suppression pool.