Department of Energy
Washington, D.C. 20545

Docket No. 50-537
HQ:S:83:225

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Dr. J. Nelson Grace, Director
CRBR Program Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Dr. Grace:

ADDITIONAL INFORMATION ON THE CIRCULATING WATER SYSTEM, PRELIMINARY SAFETY ANALYSIS REPORT (PSAR) SECTION 10.4.5

Enclosed is an amended Clinch River Breeder Reactor Plant PSAR page 10.4-7 that provides additional information concerning the consequences of flooding due to failures in the circulating water system. The enclosed pages respond to questions asked by the Nuclear Regulatory Commission staff reviewer and will be included in the next amendment to the PSAR.

Questions regarding the enclosed pages may be addressed to Mr. J. Inger (FTS 626-6182) or Mr. D. Robinson (FTS 626-6098) of the Project Office Oak Ridge staff.

Sincerely,

John R. Longenecker

John R. Longenecker
Acting Director, Office of
Breeder Demonstration Projects
Office of Nuclear Energy

Enclosure

cc: Service List
Standard Distribution
Licensing Distribution

D001

24 Five The ~~fourteen~~ ten-cell mechanical draft wet cooling tower (two towers of ~~seven~~ cells each) will dissipate the total heat load of the Circulating Water and Normal Plant Service Water Systems at a design wet bulb temperature of 76°F. The cooling tower design approach is 11°F and the
40 range is 21.34°F.

The cooling tower basin is sized to maintain 1~~,000~~,272,000 gallons of water. Makeup to the basin from the River Water Service System will maintain the basin level between predetermined limits.

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10.4.5.3 Evaluation

The cooling tower will be constructed of non-flammable materials throughout to minimize the potential for fire. The normal drift from the cooling tower will not affect the electrical switchgear and transformers.

The CWS is a non-safety related system and is not required during a plant shutdown. If available, it would be utilized for residual heat removal; if not available, then the SGAHRS (Section 5.6) would be used. Failure of the CWS will not adversely affect the function of any safety related equipment.

The cooling tower is located such that its failure will not jeopardize the safety related equipment.

Insert

10.4.5.4 Testing and Inspection Requirements

The valves and major components of the Circulating Water System are subject to hydrostatic and performance tests prior to plant operation. Hydrostatic leak test prior to initial operation will be made in accordance with the requirements of codes and standards to which the system is designed.

10.4.5.5 Instrumentation Applications

41 Pressure and temperature alarms and pressure control are provided as required on the Circulating Water System. The pump and cooling tower parameters are continuously monitored to ensure that Circulating Water System performance is optimum.

10.4.6 Condensate Cleanup System

10.4.6.1 Design Bases

The Condensate Cleanup System (i.e., Condensate Polishing Unit) is designed to maintain the condensate purity by removal of the following contaminants:

a. Corrosion products that result from the corrosion that occurs in the main steam and turbine extraction piping, feedwater heater shells, drains, and condenser.

Insert

The volume of water that could drain into the TGB as a result of a failure in the circulating water piping or condenser expansion joints is approximately equivalent to the inventory of the condenser (51,300 gal) plus the circulating water contents of the cooling tower basin (about 1,272,000 gal), i.e., a total of 1,323,000 gal. before the circulating water pumps would cavitate (assuming no operator action).

There is no safety-related equipment located in the TGB. There are two potential pathways (below the maximum circulating water system flood level) for water to enter buildings where safety-related equipment is located, i.e., the personnel door in the Steam Generator Building Auxiliary Bay of the Steam Generator Building (SGB) and the personnel access corridor leading over the Electrical Equipment Building (EEB) to the Control Building (CB) and other Nuclear Island buildings. Other openings in the TGB through which water could empty before entering the Nuclear Island (NI) buildings include doorways leading to the Maintenance Shop and Warehouse Building and the yard transformer area, as well as the roll-up door for the TGB railroad access bay.

The intended function of the safety-related equipment will not be impaired by the flow of this water into the Nuclear Island buildings since the potential pathways leading into the NI buildings from the TGB will be provided with water tight doors or will be located such that they are above the potential flood level.