April 19, 1984

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MEMORANDUM FOR: E. Adensam, Chief
Licensing Branch No. 4, DL

FROM: W. Butler, Chief
Containment Systems Branch, DSI

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION: VOGTLE ELECTRIC GENERATION PLANT (DOCKET NO.: 50-424)

Plant Name: Vogtle Electric Generation Plant
Docket No.: 50-424
Responsible Branch: LB:No. 4, DL
Project Manager: M. Miller
Review Branch: CSB
Review Status: Incomplete

The enclosed Request for Additional Information (RAI) for the Vogtle plant has been prepared bytthe Containment Systems Branch after having reviewed the appropriate sections of the FSAR. The RAI numbering sequence is a continuation of that used in the OL application acceptance review. The governing SRP sections are identified in parantheses below the item number for each RAI.

Original signed by
Walter R. Butler

W. Butler, Chief
Containment Systems Branch, DSI

Enclosure:
As stated

cc: M. Miller
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OFFICE	DSI:CSB	DSI:CSB	DSI:CSB/BC=				
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DATE	4/18/84	4/18/84	4/19/84				

ENCLOSURE

REQUEST FOR ADDITIONAL INFORMATION
CONTAINMENT SYSTEMS BRANCH

480.9 (SRP 6.2.1) Revise Table 6.2.1-1 (Containment Peak Pressure and Temperature) to include the containment design pressure requirements (including both internal and external design pressure) and the containment design temperature.

480.10 (SRP 6.2.1) Revise Table 6.2.1-3 to include two conditions of operation for the fan coolers and containment sprays, namely full capacity and the capacity used in the containment analysis.

480.11 (SRP 6.2.1) The initial containment pressures for the peak containment pressure analysis, minimum containment pressure analysis and subcompartment analysis are assumed to be 15.0, 14.7, and 13.2 psia, respectively. Discuss and justify the differences.

480.12 (SRP 6.2.1) Table 6.2.1-8 lists the calculated maximum pressure differentials for subcompartment analyses. Discuss the design basis for the subcompartment walls, and the adequacy of the structural design margins.

480.13 (SRP 6.2.1) Identify the source of the mass and energy release data listed in Tables 6.2.1-26 through 6.2.1-28 for the subcompartment analysis, and the approval status of the methodology (e.g., topical report).

480.14 (SRP 6.2.1) Provide an analysis of the forces and moments acting on the reactor vessel due to the differential pressure across the vessel caused by a reactor coolant system break within the reactor cavity. The guidelines of SRP 6.2.1.2 and Section 3.2 of NUREG-0609 should be followed.

480.15 (SRP 6.2.1) Provide additional information and/or analysis to resolve the concerns of IE Bulletin No. 80-04 regarding main steam line breaks with continued feedwater addition. Discuss whether the MSLB analysis included the impact of other energy sources, such as a continuation of feedwater or condensate flow. Discuss the ability to identify and isolate the damaged steam generator and the capability of the pumps to remain operable after extended operation at runout flow.

480.16 (SRP 6.2.1) Provide a figure showing the transient energy distribution (energy balance) in the containment, including the energy inventories of the containment atmosphere, sump water and structures, and the energy removal from the containment system for the worst case LOCA.

480.17 (SRP 6.2.1) Extend the MSLB results shown in Figures 6.2.1-27 and 6.2.1-28 beyond 1800 seconds, to about 10,000 seconds, to assure that the peak containment pressure has been reached and to provide a longer term containment temperature profile

480.18 (SRP 6.2.2) Provide additional information on the net positive suction head (NPSH) analysis of the spray pumps during the recirculation phase, in sufficient detail, to permit the staff to assess the adequacy of the analysis. Explain how the results shown in Figure 6.2.2-4 were obtained. Provide the numerical values of each term in the NPSH equation shown in Section 6.2.2.2.2.3.2 and the basis for these values.

480.19 (SRP 6.2.2) Table 6.2.2-2, Containment Fan Cooling Heat Removal Capacity, indicates the data is used for the MSLB accident. Discuss the applicability of the data to the LOCA analysis. If it is not applicable, provide a similar fan cooler heat removal capacity table for LOCA consideration.

480.20 (SRP 6.2.2) In the NPSH calculation, assuming a containment sump fluid temperature of 212°F is inconsistent with Regulatory Guide 1.1. The maximum expected temperature of the pumped fluids should be assumed.

480.21 (SRP 6.2.2) The containment spray system is designed to be manually switched from the injection to the recirculation mode. It is our understanding that the operator initiates switchover of the containment spray system after completing ECCS switchover; the switchover operation is initiated upon receipt of the RWST low-low level alarm. Provide additional information regarding the operator actions required in the switchover of the water source from the injection to the recirculation mode for containment spray system operation. Justify that adequate time will be available for carrying out these actions.

480.22 (SRP 6.2.4) FSAR Section 6.2.4.3 states that the 24-inch preaccess purge lines are only opened in the cold shutdown condition. NUREG-0737 at Item II.E.4.2 recommends that purge valves be sealed closed during operational modes 1, 2, 3, and 4.

Furthermore, these valves should be verified closed at least every 31 days. Confirm that the 24-inch purge lines will be sealed closed and subject to the prescribed surveillance. Discuss and justify how this will be accomplished.

480.23 (SRP 6.2.4) The containment isolation provisions for each fluid line penetrating containment must conform to the requirements of General Design Criteria 54, 55, 56 or 57, as appropriate. Those containment penetrations whose isolation provisions do not satisfy the explicit requirements of the General Design Criteria but which are acceptable on some other defined basis should be discussed line by line with the deviation identified and the specific "other defined basis" justified. Provide this information for staff review.

480.24 (SRP 6.2.4) Confirm that all fluid lines penetrating containment are listed in Table 6.2.4-1, with the isolation valves identified (include test, vent and drain connections). Provide justification for each containment isolation valve that will not be Type C (i.e., local leak rate) tested.

480.25 (SRP 6.2.4) The purge and vent system debris screens should satisfy the following criteria:

a. The debris screen should be seismic Category I design and installed about one pipe diameter away from the inner side of the inboard isolation valve.

b. The piping between the debris screen and the isolation valve should also be seismic Category I design.

c. The debris screen should be designed to withstand the LOCA generated differential pressure.

Discuss and justify how the VEGP purge and vent system debris screens meet the above criteria.

480.26 (SRP 6.2.4) As shown in Figure 6.2.4-1, penetration numbers 59 and 60 have isolation valves inside the containment but do not have any valves outside the containment. Justify the isolation provisions for containment penetration numbers 59 and 60 relative to GDC 55 isolation valve requirements.

480.27 (SRP 6.2.4) As shown in Figure 6.2.4-1, penetration number 87 does not have any isolation valve inside the containment. Table 6.2.4-1 indicates that penetration number 87 meets the requirements of GDC 56. Justify the isolation provisions for penetration number 87 relative to GDC 56 containment isolation requirements.

480.28 (SRP 6.2.5) It is recommended in Regulatory Guide 1.7 that the containment combustible gas control systems be designed, fabricated, erected, and tested to the Group B quality standards of R.G. 1.26. Table 3.2.2-1 indicates that the hydrogen recombiner and hydrogen monitoring systems are not so classified. Discuss your plans for complying with this staff position.

480.29 (SRP 6.2.5) SRP Section 6.2.5 recommends that the fission product decay energy used in the calculation of hydrogen from radiolysis of the emergency core cooling water and sump water is acceptable if it is equal to or more conservative than the decay energy model given in Branch Technical Position ASB 9-2 in SRP section 9.2.5. Discuss and compare the decay energy model used in the FSAR Section 6.2.5.3.1.2 with the one in SRP 9.2.5.

480.30 (SRP 6.2.5) The post-LOCA cavity purge system is designed to prevent hydrogen pocketing in the reactor cavity following a LOCA. Discuss and justify the need for this system. Discuss the performance criteria for the system.

480.31 Discuss and justify how operation of Hydrogen monitoring system is initiated. If it is done automatically, describe the initiation signals. If it is done manually, describe the procedure required.

480.32 (SRP 6.2.6) SRP 6.2.6 provides detailed guidance on how instrument lines penetrating containment should be treated during the conduct of the containment integrated leak rate test (CILRT). The following instrument lines are of concern: Penetration Numbers 13C, 67C, 69C, 70C, 71C, and 85C. Discuss how the potential leakage contribution of these lines will be included in the CILRT.

480.33 (SRP 6.2.6) FSAR Section 6.2.6.3 states that Type C testing of the safety injection lines, containment spray lines, and long term recirculation lines will not be done on the basis that these lines are water-sealed. Additional justification is needed for the elimination of Type C tests (note that Table 6.2.4-1 indicates Type C testing for the spray lines):

a. For each line, discuss and justify that a sufficient water inventory will be available for at least 30 days following a LOCA.

b. For each line, discuss your plans for hydrostatifcally testing the valves to show that water leakage from the is. .ation valves is compatible with the 30-day inventory requirement. The leakage limits for these valves should be included in the plant Technical Specifications.

c. FSAR Section 6.2.6.3 states that the isolation valves in the charging line of the chemical and volume control system are Type C tested using water. Type C testing using water as the test fluid is permissable. However, the water test may be acceptable only if it can be shown that parts a, and b. are satisfied.

480.34 (SRP 6.2.6) FSAR Section 6.2.6.4 refers to Section 6.2.6.2 regarding the periodic testing intervals of the containment hatches. It is not clear in Section 6.2.6.2 that the testing intervals meet the requirements specified in Appendix J to 10CFR50. Clarify the statements in the FSAR to explicitly comply with Appendix J requirements, or identify and justify the differences.

480.35 (SRP 6.2.2) The containment spray system is a safety related system and should be Q-listed. As shown in Table 3.2.2-1, sheet 13, item numbers 12, 13, 14, 15, 17, and 18, portions of the containment spray system are neither safety-related nor Q-listed. Explain and justify, or correct the table.

480.35 (SRP 6.2.2) The containment spray system is a safety related system and should be Q-listed. As shown in Table 3.2.2-1, sheet 13, item numbers 12, 13, 14, 15, 17, and 18, portions of the containment spray system are neither safety-related nor Q-listed. Explain and justify, or correct the table.