

July 12, 2002

Mr. J. B. Beasley, Jr.
Vice President
Southern Nuclear Operating
Company, Inc.
Post Office Box 1295
Birmingham, Alabama 35201-1295

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION RE: APPLICATION FOR
OVERTEMPERATURE DELTA TEMPERATURE AND OVERPOWER DELTA
TEMPERATURE REACTOR TRIP FUNCTION SETPOINT CHANGES -
AMENDMENTS TO FACILITY OPERATING LICENSEES, VOGTLE ELECTRIC
GENERATING PLANT, UNITS 1 AND 2 (TAC NOS. MB5046 AND MB5047)

Dear Mr. Beasley:

The Nuclear Regulatory Commission is reviewing your amendment request dated May 8, 2002, in which you submitted a request to modify the license for the Vogtle Electric Generating Plant (VEGP), Units 1 and 2. Southern Nuclear Operating Company, Inc. (SNC, the licensee) requested to amend the technical specifications for VEGP, Units 1 and 2 to revise the Overtemperature Delta Temperature (OT Δ T) and Overpower Delta Temperature (OP Δ T) reactor trip function setpoints as part of an overall Margin Recovery Program (MRP).

The staff has determined that it requires you to submit a response to the following questions in order to continue with our review of your May 8, 2002, request:

1. Westinghouse WCAP-8745-P-A, "Design Bases for the Thermal Overpower Delta T and Thermal Overtemperature Delta T Trip Functions," provides the methodology for calculating these setpoints. This WCAP established the following limits and restrictions on the use of this method:
 - a. Applies to Westinghouse plants that reference RESAR-3S and operate under Constant Axial Offset Control without part-length control rods.
 - b. The application of this methodology must account for changes in system design and operation. The adequacy of standard power shapes in establishing the core departure from nucleate boiling protection system must be evaluated whenever changes are introduced that could potentially effect the core power distribution.

Please discuss how all restrictions and limitations in WCAP-8745-P-A were evaluated in order to ensure that the methodology is applicable for the VEGP units.

2. In addition to revising the OTΔT and OPΔT setpoints and constants, the licensee proposes to change the setpoint allowable values and the core safety limits curve. Please provide a references to the NRC approved methodology used to calculate these revised values.
3. The licensee states that approval of the proposed changes to the OTΔT and OPΔT setpoints is contingent upon approval of the previous SNC amendment request for the revised relaxed axial offset control band and clamp on the compensated temperature difference term in the OTΔT trip setpoint. Please discuss how these previously proposed changes are incorporated into the analyses performed for the OTΔT and OPΔT setpoint changes being requested in the current amendment request.
4. As part of the MRP, the licensee is reducing margin in the VANTAGE+ safety analysis departure from nucleate boiling ratio (DNBR) limits to obtain additional operating flexibility. What is the new safety analysis DNBR limit? Demonstrate that adequate DNBR margin will remain to offset any DNBR penalties (i.e., rod bow, transition core) such that the DNBR design limits will be met.
5. The licensee states that the fuel assembly lift force analysis is not affected by the MRP changes because the VEGP fuel assembly lift forces that were evaluated in support of the power uprate bounded operation with or without the use of thimble plugging devices. Please discuss the technical basis for this conclusion.
6. The licensee proposes to revise the core thermal limits by reducing margins, one of which is an overpower limit increase from 118 percent to 120 percent. Please discuss the technical basis for the proposed overpower limit increase. WCAP 8745-P-A, which provides the design basis and calculation methodology for the OTΔT and OPΔT trip setpoints, is based on a value of 118 percent. Also, please discuss how this proposed change impacts the VEGP 22.4 kW/ft fuel melt limit that is based on a 118 percent overpower limit.
7. The licensee includes an allowance for 6.1 °F of uncertainty on the reactor coolant system (RCS) average temperature (T_{avg}) measurement. Please provide the technical basis for this value, including calculation methodology and a discussion of how this value is applied in the analysis.
8. The licensee listed five Updated Final Safety Analysis Report, Chapter 15 transients that rely on OTΔT and OPΔT for primary protection and stated that they were re-analyzed or evaluated to consider the proposed MRP revisions.
 - a. Please discuss which of these events were re-analyzed and which were evaluated. For those that were evaluated, provide the technical basis for the conclusion that all acceptance criteria for the event will remain satisfied. For the re-analyzed events, please provide values for the calculated results that demonstrate all acceptance criteria are satisfied.
 - b. Were the OPΔT and OTΔT setpoint changes the only changes considered? Were any other assumptions for these events revised? If so, provide the technical basis for the revised assumptions.

- c. The licensee used the LOFTRAN computer code (WCAP-790-P-A. "LOFTRAN Code Description," April 1984) to calculate DNBR values. The use of the LOFTRAN DNBR model requires user-input values of the minimum DNBR with respect to changes from nominal in the core average power, average coolant temperature, flow and pressure. Please discuss how this user-specified input was determined for the MRP reanalysis.
 - d. For the Uncontrolled Rod Cluster Control Assembly Withdrawal at Power event, NUREG-0800, "Standard Review Plan," includes fuel centerline temperature not exceeding the melt temperature as an acceptance criteria for this event. Please provide results that demonstrate this acceptance criteria is satisfied.
 - e. For the Uncontrolled Boron Dilution event, NUREG-0800 includes RCS pressure and DNBR limits as acceptance criteria for this event. Please provide results that demonstrate this acceptance criteria is satisfied.
9. Please provide the technical basis for the proposed revisions to the resistance temperature detector response time, and time constants in the OPΔT and OTΔT setpoint equations.

This request has been discussed with Jim Bailey of your staff and we have reached agreement that a reply is expected within 30 days of the date of this letter. If you have any questions, please contact me at (301) 415-1447.

Sincerely,

/RA/

Frank Rinaldi, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-424 and 50-425

cc: See next page

- c. The licensee used the LOFTRAN computer code (WCAP-790-P-A. "LOFTRAN Code Description," April 1984) to calculate DNBR values. The use of the LOFTRAN DNBR model requires user-input values of the minimum DNBR with respect to changes from nominal in the core average power, average coolant temperature, flow and pressure. Please discuss how this user-specified input was determined for the MRP reanalysis.
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9. Please provide the technical basis for the proposed revisions to the resistance temperature detectors response time, and time constants in the OPΔT and OTΔT setpoint equations.

This request has been discussed with Jim Bailey of your staff and we have reached agreement that a reply is expected within 30 days of the date of this letter. If you have any questions, please contact me at (301) 415-1447.

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Frank Rinaldi, Project Manager, Section 1
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Docket Nos. 50-424 and 50-425

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Vogtle Electric Generating Plant

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