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SOUTHERN COMPANY
Energy to Serve Your World℠

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U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Edwin I. Hatch Nuclear Plant
Response to Request For Additional Information,
Technical Specifications Change to Turbine Building Area
High Temperature Primary Containment Isolation Setpoint

Ladies and Gentlemen:

This letter responds to NRC's April 30, 2003 request for additional information regarding SNC's submittal proposing to increase the Technical Specifications (TS) allowable value for the Unit 2 turbine building high temperature primary containment isolation setpoint. The NRC questions were provided to SNC via electronic correspondence. The SNC response to the NRC questions is provided in the enclosure. A transcription of each NRC question precedes the responses.

Mr. H. L. Sumner, Jr. states he is a Vice President of Southern Nuclear Operating Company, is authorized to execute this oath on behalf of Southern Nuclear Operating Company and to the best of his knowledge and belief, the facts set forth in this letter are true.

This letter contains no NRC commitments. If you have any questions, please advise.

Respectfully submitted,

SOUTHERN NUCLEAR OPERATING COMPANY

Denis Sumner

H. L. Sumner, Jr.

Sworn to and subscribed before me this 24th *day of* June, *2003.*

Valerie A. O'Brien
Notary Public

My commission expires: April 28, 2007

A001

HLS/ocv/daj

Enclosure: Response to Request for Additional Information

cc: Southern Nuclear Operating Company
Mr. J. D. Woodard, Executive Vice President
Mr. G. R. Frederick, General Manager – Plant Hatch
Document Services RTYPE: CHA02.004

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. S. D. Bloom, NRR Project Manager – Hatch
Mr. D. S. Simpkins, Senior Resident Inspector – Hatch

State of Georgia
Mr. L. C. Barrett, Commissioner – Department of Natural Resources

Enclosure

Edwin I. Hatch Nuclear Plant – Unit 2
Response to Request for Additional Information, Technical Specifications Change to
Turbine Building Area High Temperature Primary Containment Isolation Setpoint

NRC Questions

1) Assumption 5, on page 3, of Southern Company Services calculation SMNH-94051 states that no direct winter temperature data is available for the turbine building area of interest, and then goes on to describe how the initial temperature for the area was estimated. Since the initial turbine area temperature is a critical input for the calculation, and the assumed value is not directly based on measured data:

   a) Describe measures that will be implemented to assure that this assumption remains valid over time.

   b) Explain what actions will be taken if the actual temperature is found to be not conservative with respect to the value assumed.

2) Describe in detail evaluations that have been performed and conclusions that were reached with respect to the impact that the higher allowable temperature would have on the environmental qualification of equipment.

SNC Response, Question #1

There is no need for compensatory actions with respect to assuring that the initial assumptions remain valid over time, or for the initial conditions of the turbine building area temperature and the outside temperature for the following reasons:

The detection of the postulated steam leak is insensitive to initial conditions.

As calculated, the ambient heat load in the steam chase immediately prior to the postulated leak is 83 Btu/sec. The heat load for the cell being evaluated is 1.8 Btu/sec. A 1% steam leak corresponds to a flow of 27 lbm/sec which in turn corresponds to a heat load of 33,229 Btu/sec from the leak. (*27.9 lb/sec* 1193 Btu/lbm, where 1193 Btu/lbm is the saturated steam enthalpy at 540 F*). Therefore, the steam leak contributes virtually 100% of the heat load to the area. As a result, the initial conditions are negligible. Even if one assumes the ventilation to the area is a function of the outside air temperature, the steam leak still dominates. For example, a turbine building ventilation fan exhausts air from the building at a rate of approximately 25,000 ft^3/min. Conservatively assuming all of the flow provides cooling to the steam line area, and assuming the difference in the outside air to inside air is 122 F (142 – 20), the heat load removal would be 793 Btu/sec (*25,000 ft^3/min * 122 F *.065 lb_m/ft^3 * .24 Btu/lb_m – F * 1 min/60 sec, where .065 and .24 are the density of air at 150 F and the specific heat of air at 150 F*). Still the steam leak clearly dominates.

Daily variations in outside temperatures will not affect the initial inside building conditions.

The inside building temperatures are somewhat dependent on the outside temperature on a seasonal scale, as actual summer and fall data show. For example, data taken in August of 1993 show an outside temperature of 95 F, and an average inside temperature of 168 F near the main steam lines. Fall data taken in early December of 1994 shows that for outside temperatures of 48 and 45 degrees the average temperature is roughly 151 F. Extrapolation to a 20 F outside temperature results in a winter inside temperature average of 142 F. Day to day and hour to hour variations in the building temperatures, however, are not sensitive to outside temperatures. Although data has not been tabulated for the turbine building comparing inside temperatures to outside temperatures on an hourly basis, such data has been tabulated for the reactor building, and it shows a nearly imperceptible change in the inside building temperature with respect to the daily variations in the outside temperatures.

Therefore, for the above reasons, compensatory actions are unnecessary to account for situations where the outside temperature is below 20 F.

The initial outside temperature assumption used in the calculation was sufficiently low.

In the turbine building leak detection calculation, the assumption for the initial outside temperature was 20 F. The inside turbine building temperature data taken at outside temperatures of 45 F and 48 F was taken to aid in the extrapolation of a winter average building temperature, which would correlate to an outside temperature of 20 F. The value of 20 F is also used as the design low temperature for many of the Hatch ventilation systems. For example, the reactor and refueling zone ventilation systems are designed to maintain building temperatures assuming outside temperatures between 20 F and 95 F. Historical data further supports using 20 F for design purposes. The Hatch Unit 2 FSAR, in section 2.3 contains temperature data for the areas surrounding Plant Hatch. For example, temperature data for Macon, Ga. indicates an average daily minimum from 37 F in January to 71 F in July. Thus, the low temperature assumption of 20 F is reasonable. Furthermore, recent data for the plant, from the year 1998 to 2002, shows that the 5 year average of the daily minimums for each month range from 39.1 F in January to 71.1 F in July. For the noted 5 year period, the lowest monthly minimum average occurred in December of 2000 and was 32.4 F. To be sure, temperatures in the surrounding areas can and have gone below 20 F, however, the daily average minimums support the use of the 20 F in the calculation without having to resort to compensatory actions.

SNC Response, Question #2

Environmental Qualifications are not applied to equipment in the turbine building, therefore there is no impact from the increased setpoint.