

Don E. Grissette
Vice President

**Southern Nuclear
Operating Company, Inc.**
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201

Tel 205.992.6474
Fax 205.992.0341



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50-425

NL-05-0936

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

Vogtle Electric Generating Plant
Response to Request for Additional Information on Request to
Revise Technical Specifications – Ultimate Heat Sink

Ladies and Gentlemen:

By letter NL-04-0238 dated April 26, 2004, Southern Nuclear Operating Company (SNC) submitted a proposed revision to the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS). The proposed changes would revise the TS Limiting Conditions for Operation (LCO) 3.7.9, "Ultimate Heat Sink (UHS)." SNC submitted letter NL-05-0334 dated April 18, 2005, in response to a request for additional information by the NRC staff. An updated response for item three of that letter is provided in the enclosure to this letter.

A follow-up request for additional information was made by the NRC staff via a telephone conference with SNC on May 13, 2005. The requested information is also provided in the enclosure to this letter.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Don E. Grissette".

Don E. Grissette

DEG/kgj/daj
Enclosure

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. T. E. Tynan, General Manager – Plant Vogtle
RType: CVC7000

U. S. Nuclear Regulatory Commission
Dr. W. D. Travers, Regional Administrator
Mr. C. Gratton, NRR Project Manager – Vogtle
Mr. G. J. McCoy, Senior Resident Inspector – Vogtle

Vogtle Electric Generating Plant – Units 1 and 2
Response to Request for Additional Information
Request to Revise Technical Specifications – Ultimate Heat Sink

SNC submitted letter NL-05-0334 dated April 18, 2005, in response to a request for additional information by the NRC staff. An updated response for request number three of that letter is provided below. The margin in the 63° wet-bulb limit is 0.7 degrees instead of 0.9 degrees.

3) NRC Request (from NL-05-0334):

Surveillance Requirement (SR) 3.7.9.5, states “Verify ambient wet-bulb temperature $\leq 63^{\circ}\text{F}$ when one NSCW tower fan is out-of-service and daily high temperature (dry-bulb) is forecasted to be $> 48^{\circ}\text{F}$,” at a frequency of 24 hours. What is the basis for selecting the dry-bulb temperature limit of 48°F ? Explain how measurement uncertainties are accounted during surveillance.

Corrected SNC Response:

Surveillance of the wet-bulb temperature is not necessary when the daily forecast high temperature (dry-bulb) will be fifteen degrees less (margin) than the TS limit of 63°F . The wet-bulb temperature will not be greater than the corresponding dry-bulb temperature. Therefore, the 48°F dry-bulb temperature ensures that a fifteen degree margin exists between the forecasted daily high temperature and the TS limit of 63°F (wet-bulb). This limit eliminates the need for surveillance of the wet-bulb temperature when daily temperatures (dry-bulb) are not expected to reach 48°F . Surveillance of the ambient temperature is necessary to ensure that 63°F (wet-bulb) is not exceeded. When ambient temperatures (dry-bulb) are greater than 48°F , daily surveillance of the wet-bulb temperature will be required to ensure that the TS limit of 63°F is not exceeded. There is a margin of ~~0.9~~ 0.7 degrees in the 63°F wet-bulb limit to account for temperature measurement uncertainties.

Vogtle Electric Generating Plant – Units 1 and 2
Response to Request for Additional Information
Request to Revise Technical Specifications – Ultimate Heat Sink

The following follow-up requests were made by the NRC staff to complete the review of the proposed revision to the Vogtle Electric Generating Plant (VEGP) Unit 1 and Unit 2 Technical Specifications (TS). The proposed changes would revise the TS Limiting Conditions for Operation (LCO) 3.7.9, “Ultimate Heat Sink (UHS).” These follow-up requests deal specifically with the responses provided in SNC submitted letter NL-05-0334 dated April 18, 2005, in response to a request for additional information by the NRC staff. Responses to these follow-up requests are provided as follows.

1) NRC Request:

In response 2 it is not clear how the licensee calculated the wet-bulb temperatures of 63 deg F and 67 deg F for one and two of four fans out of service, respectively.

SNC Response:

The four cooling tower performance curves provided in the enclosure to submittal letter NL-05-0334 dated April 18, 2005, represent cooling tower performance for different temperature ranges. Each temperature range represents a specific heat load for the cooling tower. Each cooling tower, with four fans operating, is designed to reject a heat load of 265 million BTUs per hour at a flow rate of 15,600 gpm and a wet-bulb temperature of 82°F. This is the maximum heat load for the three conditions that rely on four operating fans.

These conditions are plant cool-down with a loss of off-site power, a main steam line break, and a loss-of-coolant accident. The corresponding range for this heat load is 34 degrees. The corresponding wet-bulb temperature (67°F) for three fan operation was linearly interpolated from the data on the performance curves provided in the April 18, 2005, submittal.

A fourth condition relies on three operating fans with a second fan lost from service due to a tornado missile during an LOSP. The maximum heat load for this condition is 235 million BTU per hour at a flow rate of 15,600 gpm and a wet-bulb temperature of 82°F. The corresponding range for this heat load is 30.2 degrees. The corresponding wet-bulb temperature (63°F) for two fan operation was linearly interpolated from the data on the performance curves provided in the April 18, 2005, submittal.

Vogle Electric Generating Plant – Units 1 and 2
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The performance curves were used to determine the reduced wet-bulb temperatures at which the heat loads described above could be met with an additional fan removed for maintenance. Tower performance data (range at 15,600 gpm) was converted to heat load. The two fan condition described above is limiting at a wet-bulb temperature of 63°F. These values are summarized in the table below.

<u>Range (ΔT)</u>	<u>Heat Load (million BTU/hr)</u>	<u>Wet-bulb Temperature ($^{\circ}F$)</u>	
		<u>Three Fans</u>	<u>Two Fans</u>
8.5	66	79.3	76.4
15.0	117	76.5	73.0
25.0	194	72.0	66.7
30.2 (2 fans)	235	n/a	63.7
34 (3 fans)	265	67.8	n/a
37.4	291	66.2	59.9

2) NRC Request:

Response 3 states that surveillance of the wet-bulb temperature is not necessary when the daily forecast of high temperature will be 15 degrees less than the TS limit of 63 deg F. Does this mean that the error limit of the daily forecast of high temperature is 15 deg F? Explain the basis for choosing a 15 deg F limit.

SNC Response:

The National Weather Service (NWS) operates a national verification program that provides feedback to forecasters. This publicly available data provides trends in forecast accuracy. The southeastern United States forecast accuracy is typically within fifteen degrees of the actual daily high temperatures. A review of nineteen months of recent data demonstrates reasonable assurance that the daily forecast high temperature is accurate to within fifteen degrees of the actual daily high temperature.