



Serial: NPD-NRC-2009-245
December 15, 2009

10CFR52.79

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

**SHEARON HARRIS NUCLEAR POWER PLANT, UNITS 2 AND 3
DOCKET NOS. 52-022 AND 52-023
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 073 RELATED TO
REGIONAL CLIMATOLOGY**

Reference: Letter from Brian Hughes (NRC) to James Scarola (PEC), dated November 25, 2009, "Request for Additional Information Letter No. 073 Related to SRP Section 02.03.01 – Regional Climatology for the Shearon Harris Units 2 and 3 Combined License Application"

Ladies and Gentlemen:

Progress Energy Carolinas, Inc. (PEC) hereby submits our response to the Nuclear Regulatory Commission's (NRC) request for additional information provided in the referenced letter. A response to the NRC request is addressed in the enclosure.

If you have any further questions, or need additional information, please contact Bob Kitchen at (919) 546-6992, or me at (727) 820-4481.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 15, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read 'John Einitsky', written over a horizontal line.

John Einitsky
Vice President
Nuclear Plant Development

Enclosure

cc : U.S. NRC Region II, Regional Administrator
U.S. NRC Resident Inspector, SHNPP Unit 1
Mr. Brian Hughes, U.S. NRC Project Manager

**Shearon Harris Nuclear Power Plant Units 2 and 3
Response to NRC Request for Additional Information Letter No. 073 Related to
SRP Section 02.03.01 for the Combined License Application, dated November 25, 2009**

<u>NRC RAI #</u>	<u>Progress Energy RAI #</u>	<u>Progress Energy Response</u>
02.03.01-15	H-0514	Response enclosed – see following pages

NRC Letter No.: HAR-RAI-LTR-073

NRC Letter Date: November 25, 2009

NRC Review of Final Safety Analysis Report

NRC RAI #: 02.03.01-15

Text of NRC RAI:

This RAI is in regards to the Progress Energy reply to RAI 02.03.01-14 (Letter dated June 26, 2009).

NRC staff reviewed the calculation, HAG-0000-X6C-001, Rev. 0, "Dry-bulb/Wet-bulb Temperature Evaluation," at the Progress Energy-provided Reading Room. The RAI response and the calculation describe the mean coincident wet-bulb temperature as being used in the Maximum Safety Dry Bulb and Coincident Wet Bulb Temperatures site characteristic calculations.

10 CFR 52.79(a)(1)(iii) states the COL FSAR shall include "the seismic, meteorological, hydrologic, and geologic characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated."

The staff's position on the Maximum Safety Dry Bulb and Coincident Wet Bulb Temperature site characteristics is based on the following statement by Westinghouse, regarding the AP1000 design (see enclosure 3 to ML070880685 beginning on pg 45 of 81):

The maximum safety limit is the bounding temperature used by Westinghouse in the Chapter 15 Safety Analyses. We have selected bounding values to encompass a large population of potential sites in the US.

Our conditions are mainly based on a potential COL Applicant's calculation of their maximum coincident dry bulb/wet bulb temperature limits which was based on the maximum dry bulb temperature that has existed at the site for 2 hours or more combined with the maximum wet bulb temperature that exists in that population of dry bulb temperatures. This temperature selection process is based on historical meteorological data.

The maximum non-coincident wet bulb temperature is based on the maximum wet bulb temperature that has existed at the site for 2 hours or more based on historical meteorological data.

Please revise the appropriate text and tables in the FSAR to include the maximum dry bulb temperature that has existed at the site for 2 hours or more combined with the maximum wet bulb temperature that exists in that population of dry bulb temperatures, as stated in the Westinghouse discussion above. The staff recommends that these calculations should remain in the current form of 100-year return interval temperatures so as to be consistent with NRC guidance.

PGN RAI ID #: H-0514

PGN Response to NRC RAI:

The calculation, HAG-0000-X6C-001, Rev. 0, used maximum values for input into the linear regression equation used to determine the coincident wet-bulb temperature. Selection of maximum values is outlined on page 5 of the calculation and illustrated in Attachment D of the calculation. To fully reflect inclusion of maximum values in the regression equation, the term "Mean Coincident Wet Bulb" temperature used in Rev. 0 was changed to "Maximum Coincident Wet Bulb" temperature and a revised calculation, HAG-0000-X6C-001, Rev. 1, is available in the Progress Energy-provided Reading Room. No changes to the wet-bulb temperatures computed in HAG-0000-X6C-001, Rev 0 were required.

Rev 1 of the FSAR was reviewed in response to the RAI. The wording used to describe the coincident 100-year wet-bulb temperature in calculation HAG-0000-X6C-001, Rev. 0 was not used in Rev 1 of the FSAR so no corresponding changes were needed in the FSAR. Specifically, FSAR Subsection 2.3.1.2.7.1 ("Maximum Safety Dry Bulb and Coincident Wet Bulb Temperature") used the term "Maximum Safety 100-year recurrent dry bulb and coincident wet bulb temperature...", which was consistent with the methodology of using the maximum wet-bulb temperature in the computation of the coincident wet bulb temperature. Table 2.3.1-209 in the FSAR, which summarizes wet-bulb temperatures in the FSAR, uses the term "Maximum Safety" to describe the 100-year 2-hour sustained dry-bulb temperature and maximum coincident wet bulb temperatures (106.6°F / 73.6°F). No changes are required to the wording used to describe the 100-year 2-hour sustained dry-bulb temperature and maximum coincident wet bulb temperature in Table 2.3.1-209.

Associated HAR COL Application Revisions:

No COLA changes have been identified associated with this response.

Attachments/Enclosures:

None.