



Tennessee Valley Authority, 1101 Market Street, LP 5A, Chattanooga, Tennessee 37402-2801

January 20, 2009

10 CFR 52.79

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

In the Matter of)
Tennessee Valley Authority)

Docket No. 52-014 and 52-015

**BELLEFONTE COMBINED LICENSE APPLICATION – RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION – REGIONAL CLIMATOLOGY**

- References:
- 1) Letter from Ravindra Joshi (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 088 Related to SRP Section 02.03.01 for the Bellefonte Units 3 and 4 Combined License Application, dated July 25, 2008
 - 2) Letter from Andrea L. Sterdis (TVA) to Document Control Desk (NRC), Response to Request for Additional Information – Regional Climatology, dated August 20, 2008.

This letter provides the Tennessee Valley Authority’s (TVA) supplemental response to the Nuclear Regulatory Commission’s (NRC) request for additional information (RAI) item 02.03.01-09 included in reference 1. This revised response is submitted as requested by NRC following verbal clarifications of the requested information.

A response to the NRC request in the subject letter is addressed in the enclosure which also identifies any associated changes that will be made in a future revision of the BLN application.

If you should have any questions, please contact Tom Spink at 1101 Market Street, LP5A, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-7062, or via email at tespink@tva.gov.

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

Executed on this 20th day of Jan, 2009.

Andrea L. Sterdis
Manager, New Nuclear Licensing and Industry Affairs
Nuclear Generation Development & Construction

Enclosure
cc: See Page 2

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NRO*

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cc: (w/Enclosure)

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Enclosure
TVA letter dated January 20, 2009
RAI Responses

Responses to NRC Request for Additional Information letter No.088 dated July 25, 2008
(3 pages, including this list)

Subject: Regional Climatology in the Final Safety Analysis Report

<u>RAI Number</u>	<u>Date of TVA Response</u>
02.03.01-09	August 20, 2008 – Revised by this letter – see following pages

<u>Associated Additional Attachments / Enclosures</u>	<u>Pages Included</u>
None	

Enclosure
TVA letter dated January 20, 2009
RAI Responses

NRC Letter Dated: July 25, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 02.03.01-09

Standard Review Plan 2.3.1 states that the applicability of data on severe weather phenomena used to represent site conditions during the expected period of reactor operation should be substantiated. Current literature on possible changes in the weather in the site region should also be reviewed to be confident that the methods used to predict weather extremes are reasonable. Include a discussion in FSAR Section 2.3.1 on the possible changes in the weather in the site region and any potential impact on the proposed site characteristics.

BLN RAI ID: 2569

BLN RESPONSE:

General Design Criterion (GDC) 2 in Appendix A to 10 CFR Part 50 requires “consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated.”

Extreme weather calculations for BLN were conducted over the maximum data span available. Certified climatological data obtained from the U.S. National Climatic Data Center (NCDC) was used for the severe weather phenomena evaluations. This data selection supports accurate severe weather phenomena projections for the area in the vicinity of BLN site. This extensive historic data record provides the historical climatic trends and severe natural phenomena to be included in the site characterization.

Dry-bulb, coincident wet-bulb, and non-coincident wet-bulb temperatures represent significant site characteristics because this data is used in demonstrating that the AP1000 DCD site parameters are bounding (i.e., more conservative). The BLN site characteristic temperatures were developed by considering both 100-year return temperatures and 0% exceedance temperatures. These values were calculated using a 35-year sequential hourly meteorological data set for Huntsville, AL, National Weather Service (NWS) station. The maximum safety and minimum safety wet-bulb and dry-bulb temperature site characteristics were calculated using the 0% exceedance methodology. The resulting site characteristics were provided in response to RAI 02.03.01-08, BLN-RAI-LTR-022 revised response. The difference between the BLN site characteristics and the DCD site parameters, used for design, provide additional margin to the selected BLN site characteristic maximum safety temperatures.

General predictions on global or U.S. climatic changes expected during the period of reactor operation are uncertain and are only applicable on a macroclimatic scale. Since the maximum data span available (that is representative of the microclimate near the BLN site) was used in the severe weather analysis, accurate severe weather phenomena projections have been provided based on historic data. Projection of future climatological conditions at the BLN site are speculative at best, based on current understanding and modeling of global climate change.

Reference: “Climate Models: An Assessment of Strengths and Limitations,” U.S. Climate Change Science Program, Synthesis and Assessment Product 3.1, July 2008, Page 5.

The response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION TEXT CHANGES:

1. COLA Part 2, FSAR Chapter 2, Subsection 2.3.1.3.1 will be revised to add the following as the final two paragraphs of this subsection:

Dry-bulb, coincident wet-bulb, and non-coincident wet-bulb temperatures represent significant site characteristics because this data is used in demonstrating that the BLN site characteristics are bounded by the AP1000 DCD site parameters. The BLN site characteristic temperatures were developed by considering both 100-year return temperatures and 0% exceedance temperatures. These values were calculated using a 35-year sequential hourly meteorological data set for Huntsville, AL, National Weather Service (NWS) station. The difference between the BLN site characteristics and the DCD site parameters, used for design, provides additional margin.

General predictions on global or U.S. climatic changes expected during the period of reactor operation are uncertain and are only applicable on a macroclimatic scale. Since the maximum data span available (that is representative of the microclimate near the BLN site) was used in the severe weather analysis, accurate severe weather phenomena projections have been provided based on historic data. Projection of future climatological conditions at the BLN site are speculative at best, based on current understanding and modeling of global climate change.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None