

May 20, 2008

Ms. Andrea L. Sterdis
Manager, Nuclear Licensing & Industry Affairs
Nuclear Generation Development & Construction
Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402-2801

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION LETTER NO. 022 RELATED TO
SRP SECTION 2.3.1 FOR THE BELLEFONTE UNITS 3 and 4 COMBINED
LICENSE APPLICATION

Dear Ms. Sterdis:

By letter dated September 30, 2007, as supplemented by letters dated November 2, 2007, January 8, 2008 and January 14, 2008, Tennessee Valley Authority (TVA) submitted its application to the U. S. Nuclear Regulatory Commission (NRC) for a combined license (COL) for two AP1000 advance passive pressurized water reactors pursuant to 10 CFR Part 52. The NRC staff is performing a detailed review of this application to enable the staff to reach a conclusion on the safety of the proposed application.

The NRC staff has identified that additional information is needed to continue portions of the review. The staff's request for additional information (RAI) is contained in the enclosure to this letter.

To support the review schedule, you are requested to respond within 30 days of the date of this letter. If changes are needed to the final safety analysis report, the staff requests that the RAI response include the proposed wording changes.

If you have any questions or comments concerning this matter, you may contact me at 301-415-1132.

Sincerely,

/RA/

Joseph M. Sebrosky, Senior Project Manager
AP1000 Projects Branch 1
Division of New Reactor Licensing
Office of New Reactors

Docket Nos. 52-014
52-015
eRAI Tracking No. 232

Enclosure:
Request for Additional Information

CC: see next page

If you have any questions or comments concerning this matter, you may contact me at 301-415-1132.

Sincerely,

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Joseph M. Sebrosky, Senior Project Manager
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Docket Nos. 52-014
52-015
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Enclosure:
Request for Additional Information

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DATE	04/30/08			5/6/08	5/20/08

*Approval captured electronically in the electronic RAI system.

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Request for Additional Information
Bellefonte Units 3 and 4
Tennessee Valley Authority
Docket No. 52-014 and 52-015
SRP Section: 02.03.01 - Regional Climatology
Application Section: 2.3.1

QUESTIONS from Siting and Accident Consequences Branch

02.03.01-1

It appears that the tornado wind speed values in SAR section 2.3.1.2.1.2 (e.g., 10-7 probability of expected maximum tornado wind speed of 285 mi/h) were taken from NUREG/CR-4461 Rev. 1, while the Design Basis Tornado Parameters in SAR section 2.3.1.4 (e.g., Design Basis Tornado maximum wind speed of 230 mi/h) were taken from Revision 1 of Regulatory Guide 1.76, which is based on NUREG/CR-4461 Rev. 2. Justify the inconsistency between these values.

02.03.01-2

SAR section 2.3.1.2.1.3 estimated 17 thunderstorm events per year in northeast Alabama and extreme south central Tennessee. The NCDC Local Climatological Data from the first order NWS station at Huntsville, AL identified a frequency of 55.6 thunderstorms per year. Please justify the value chosen.

02.03.01-3

The BLN SAR identified the Air Quality Control Region (AQCR) for Jackson County as part of the Tennessee River Valley (Alabama)-Cumberland Mountains (Tennessee) Interstate Air Quality Control Region. Attainment designations were provided, and a nonattainment for PM-2.5 (particulate matter with a diameter less than 2.5 microns) was identified for Jackson County. Please describe any impact that the nonattainment area designation has on the design and/or operation of the proposed nuclear power unit.

02.03.01-4

SAR section 2.3.1.2.2, "Severe Winter Storm Events", contains an estimate (7.53 inches liquid) of the 48 hour Probable Maximum Winter Precipitation (PMWP) derived from 5 years of BLN site data. This estimate appears to be inconsistent with the 48 hour PMWP value of 24.7 inches (based on HMR-53) listed in section 2.3.1.2.2.2, "Estimated Weight of the 48 hour Maximum Winter Precipitation". Please explain/justify the difference between these values.

02.03.01-5

SAR section 2.3.1.2.2.1 states that the greatest snow depth recorded at Scottsboro was 10 inches, while section 2.3.1.2.2 states that the greatest snowfall in Scottsboro deposited 12 inches. Justify using the 10 inch value vs. the 12 inch freshly fallen snow value for the 100-year snow pack value.

02.03.01-6

Please identify that portion of the 48-hour PMWP that could fall as frozen precipitation.

Enclosure

02.03.01-7

SAR Section 2.3.1.3 states that it discusses BLN site and local area meteorological data that may impact design of safety-related heat removal systems. SAR Section 2.3.1.3.1 then goes on to present the controlling meteorological parameters necessary for the analysis of cooling tower performance. However, the chosen reactor design (AP1000) does not use a cooling tower to release heat to the atmosphere following a loss-of-coolant accident (AP1000 DCD Tier 2 Section 6.3). Instead, a passive containment cooling system (PCS) would provide the safety-related UHS. (a) Please provide the meteorological data used to evaluate the PCS system. (b) Please identify all the cooling towers used to support plant operation and state whether they serve a safety-related function.

02.03.01-8

SAR Table 2.0-201 lists Maximum Safety and Minimum Safety wet-bulb and dry-bulb temperature site characteristics as 0.4% exceedance values rather than 0% exceedance values. Because the maximum and minimum safety temperature site characteristics should be based on the higher of either historic or 100-year return period values, please confirm how SAR Table 2.3-203 corresponds with Table 2.0-201 using the higher of either historic or 100-year return period site characteristic values for maximum and minimum safety temperatures.