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

September 18, 2008

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 – PROBABILISTIC RISK ASSESSMENT AND SEVERE ACCIDENT EVALUATION

Reference: Letter from Ravindra Joshi (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 120 Related to SRP Section 19 for the Bellefonte Units 3 and 4 Combined License Application, dated August 08, 2008

This letter provides the Tennessee Valley Authority's (TVA) response to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) items included in the reference letter.

A response to each 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 Phillip Ray at 1101 Market Street, LP5A, Chattanooga, Tennessee 37402-2801, by telephone at (423) 751-7030, or via email at pmray@tva.gov.

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

Executed on this 18th day of Sep, 2008.

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

Enclosure
cc: See Page 2

D085
NRO

cc: (w/Enclosure) J. P. Berger, EDF
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Enclosure
TVA letter dated September 18, 2008
RAI Response

Responses to NRC Request for Additional Information letter No. 120 dated August 08, 2008
(5 pages, including this list)

Subject: Probabilistic Risk Assessment and severe Accident Evaluation in the Final Safety Analysis Report

RAI Number	Date of TVA Response
19-05	This letter – see following pages
19-06	This letter – see following pages
19-07	This letter – see following pages

Associated Additional Attachments / Enclosures	Pages Included
None	

Enclosure
TVA letter dated September 18, 2008
RAI Response

NRC Letter Dated: August 08, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 19-05

BLN COL 19.59.10-2 states that the "PRA will be updated to reflect these differences [between the as-built plant and the design used as the basis for the AP1000 PRA] if they potentially result in a significant increase in core damage frequency or large release frequency."

(a) Please clarify how the BLN PRA (to be completed by fuel load) will be updated to account for BLN site-specific information per 10 CFR 52.79(d)(1) and 10 CFR 50.71(h)(1) as well as as-built information.

(b) Please define "significant increase."

BLN RAI ID: 0750

BLN RESPONSE:

(a) The PRA will be updated as described in FSAR Subsection 19.59.10.6. The process for development of the plant specific PRA will include evaluation of plant as-built differences, departures from certified design and the results of the plant specific review of DCD Table 19.59-18. The update process described in FSAR Subsection 19.59.10.6 is consistent with the requirements of 10 CFR 52.79(d)(1) and 10 CFR 50.71(h)(1).

(b) Any difference in the AP1000 PRA-based insights of DCD Table 19.59-18 could potentially result in an increase in core damage frequency (CDF) or large release frequency (LRF). Plant specific PRA-based insight differences will be evaluated and the plant specific PRA model modified as necessary to reflect the plant specific design and the PRA-based insight; as such, the FSAR will be revised to remove "significant increase."

The response is PLANT-SPECIFIC

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 2, FSAR Chapter 19, subsection 19.59.10.5, second paragraph will be changed from:

A review of the differences between the as-built plant and the design used as the basis for the AP1000 PRA and DCD Table 19.59-18 will be completed prior to fuel load. The PRA will be updated to reflect these differences if they potentially result in a significant increase in core damage frequency or large release frequency.

To read:

A review of the differences between the as-built plant and the design used as the basis for the AP1000 PRA and DCD Table 19.59-18 will be completed prior to fuel load. The plant specific PRA-based insight differences will be evaluated and the plant specific PRA model modified as necessary to account for plant-specific design and any design changes or departures from the design certification PRA.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

Enclosure
TVA letter dated September 18, 2008
RAI Response

NRC Letter Dated: August 08, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 19-06

The AP 1000 Final Safety Evaluation Report (FSER) includes several specific COL action items related to shutdown training. These action items correspond to COL information item 13.2-1 in the AP1000 DCD. Please document in the RCOL application how the following specific training areas will be addressed in the operator training program:

(a) FSER COL Action Item 19.1.8.3-1: The COL applicant is responsible for developing . . . training to close containment hatches and penetrations following an accident during Modes 5 and 6 before steam is released into containment.

(b) FSER COL Action Item 19.1.8.7-1: The COL applicant . . . should provide training to the operators on how to use the non-safety related wide range pressurizer level indication to identify inconsistencies in the safety-related hot-leg instrumentation to prevent RCS overdraining.

BLN RAI ID: 1174

BLN RESPONSE:

Training on evolutions such as containment closure and use of wide range pressurizer level indication is addressed by the programs and procedures described in FSAR Sections 13.2 and 13.5.

FSAR Section 13.2 incorporates by reference NEI 06-13, Template for an Industry Training Program Description, which was produced by industry training personnel and approved by the NRC in Final Safety Evaluation for Topical Report NEI 06-13, "Template for an Industry Training Program." NEI 06-13A provides high level descriptions of programs that provide necessary training to operators and staff for all phases of operation including shutdown operations, and under a variety of conditions including abnormal and emergency operations. Shutdown operations and special contingency actions to enhance shutdown safety are covered by subject matter referred to in Sections 1.1.1.1, 1.1.1.2, 1.1.2 and 1.2.1 of NEI 06-13A.

Included in material covered in the operator license training program is application of Technical Specifications (TS) and use of station procedures. TS 3.6.8 and the corresponding Bases provide direction for maintaining containment closure and containment closure capability during MODES 5 and 6. The administrative and operating procedures described in FSAR Section 13.5, DCD Section 13.5, and Westinghouse Technical Report APP-GW-GLR-040 address activities and measures used during refueling and outage planning. Plant operating procedures address operator actions required to respond to abnormal or emergency operating conditions. The operators are trained to these procedures.

This RAI response includes a voluntary change/clarification to the FSAR Sections 19.46, 19.47, 19.48, 19.52 and 19.53 per discussions with the NRC staff as shown below.

This response is expected to be STANDARD for the S-COLAs.

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 2, FSAR Chapter 19, Sections 19.46, 19.47, 19.48, 19.52 and 19.53 will be revised to change the section title from "Deleted" to "Not Used" and change the text from:

This section of the referenced DCD is incorporated by reference with no departures or supplements.

To read:

This section was not required for DCD and is not used by DCD and FSAR.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

Enclosure
TVA letter dated September 18, 2008
RAI Response

NRC Letter Dated: August 08, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 19-07

COL action item 19.1.8.1-3 in the FSER states that the AP1000 design provides features for detecting and suppressing fires and floods and the COL applicant is "expected to take compensatory measures to maintain adequate detection and suppression capability during maintenance activities." The response to COL information item 9.5.1-3 addresses conformance to Branch Technical Position (BTP) 9.5-1, including administrative controls, but does not specifically address maintenance activities. Please address in the RCOL application how both fire and flood detection and suppression capability is maintained during maintenance activities.

BLN RAI ID: 1175

BLN RESPONSE:

The availability of fire detection and suppression when required, including during maintenance activities, is part of the defense-in-depth aspect of the Fire Protection Program as noted in FSAR Subsection 9.5.1.8. At times, during maintenance activities, maintaining defense-in-depth may require compensatory measures. Compensatory measures for fire protection are addressed in FSAR Subsection 9.5.1.8.1.2, which describes use of a permit system that controls and documents inoperability of fire protection systems and equipment, and establishes requirements to initiate proper notifications and compensatory actions, such as fire watches, when inoperability of any fire protection system or component, such as detectors or suppression devices, is identified.

Flooding control features and sump level indication are provided in the design. These design features are described in DCD Section 3.4 and Subsection 9.3.5. Containment sumps, which detect leakage/flooding in the containment, are described in DCD Subsection 3.4.1.2.2.1. Any inoperability of these leak detection systems that might be caused by maintenance activities are controlled by Limiting Condition for Operation with required actions and completion times to provide direction and compensatory action.

Flood detection and suppression in other areas are generally managed with the floor drain system, which provides for level detection and automatic or manual pump down methods for control of excessive amounts of flow of water into the sump. Administrative procedures described in FSAR Subsection 13.5.1 control maintenance activities and provide for equipment control and compensatory actions, when appropriate, for detection or suppression of internal flooding.

This response is expected to be STANDARD for the S-COLAs.

ASSOCIATED BLN COL APPLICATION REVISIONS:

No COLA revisions have been identified associated with this response.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None