



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

June 11, 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 – QUALITY ASSURANCE**

Reference : Letter from Brian C. Anderson (NRC) to Andrea L. Sterdis (TVA), Request for
Additional Information Letter No. 014 Related to SRP Section 17.5 for the
Bellefonte Units 3 and 4 Combined License Application, dated May 12, 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 and also
identifies associated changes that will be made in a future revision of the BLN application.

If there are any questions regarding this application, please contact Phillip Ray at 1101 Market
Street, LP 5A, 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 11th day of June, 2008.

Jack A. Bailey
Vice President, Nuclear Generation Development

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Cc: See Page 2

D085
NRO

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cc (Enclosure:)

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Enclosure
TVA letter dated June 11, 2008, 2008
RAI Responses

Responses to NRC Request for Additional Information letter No. 014 dated May 12, 2008
(6 Pages, including this list)

Subject: Quality Assurance

<u>RAI Number</u>	<u>Date of TVA Response</u>
17.05-10	This letter – see following pages
17.05-11	This letter – see following pages

Attachments / Enclosures

Pages Included

None

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TVA letter dated June 11, 2008, 2008
RAI Responses

NRC Letter Dated: May 12, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 17.05-10

Section 17.1 of the Bellefonte Final Safety Analysis Report (FSAR) states, in part, that the NuStart Energy Development, LLC (NuStart) Quality Assurance (QA) program, along with the Westinghouse Electric Company (Westinghouse) Quality Management System (QMS) define the QA program requirements for design activities. In order to determine the potential scope for planned NRC inspections of TVA's implementation of the QA program for Bellefonte (per NRC Inspection Manual Chapter 2502), the NRC staff requests clarification on the expected NuStart and Westinghouse scope of work related to Bellefonte combined license application (COLA) design activities from the time of docketing until the time the COL might be issued. In particular, please identify when and where these design activities would take place.

BLN RAI ID: 348

BLN RESPONSE:

As identified in FSAR Section 17.1, "Construction activities at Bellefonte are not planned before the COL is issued." Further, TVA has no plans to perform additional safety-related design beyond those necessary to continue supporting the COL Application review by the NRC prior to the COL issuance.

Westinghouse Electric Company (WEC) may engage in first-of-a-kind engineering activities associated with the AP1000; however, those activities are the responsibility of WEC and scope and schedule for those activities would need to be obtained from WEC.

The phases of a Nuclear Plant Development under Part 52 from a QA Program are as follows:

1. Standard Plant Design Certification
2. Standard Plant Design Finalization
3. Site-specific Characterization
4. Site-specific Design Finalization
5. Engineering, Procurement, and Construction (EPC)
6. Fuel-load and Operation

The breadth of content for the specific phases and the timing for moving from one phase to another is influenced by an individual COL applicant/licensee's development strategy.

Standard term definitions from 10 CFR 52.1 are used in the following discussion.

Phase 1, Standard Plant Design Certification - Activities in this phase are the responsibility of the applicant for certification.

Phase 1 activities include the activities necessary to obtain the standard design certification under Subpart B of 10 CFR Part 52. The applicability of the QA Program to those activities is determined by WEC.

Phase 2, Standard Plant Design Finalization - The degree of completion of design necessary to support design certification is not necessarily sufficient to support the fabrication, procurement, and construction of the standard nuclear plant. As identified in Phase 1, the quality assurance

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program applied to the design of the structures, systems, and components of the standard plant is described in the application for standard design certification.

Phase 2 activities include activities necessary to develop procurement, fabrication, and construction documents, which implement the standard design certification.

The activities under Phase 2 and Phase 5 overlap. The quantity of activities completed under Phase 2 may vary greatly from plant to plant depending on the timing of the licensee's deployment of the EPC activities. By the time the Nth plant is ready for construction, the standard design is likely complete for the first plant deployment.

WEC may be performing standard plant design finalization activities prior to issuance of the COL for Bellefonte. However, those are standard plant design activities, and are not currently being conducted at the request, direction, or oversight of TVA. WEC activities related to the standard design are not subject to oversight of TVA until Phase 5.

Phase 3, Site-specific Characterization – In this phase, the COL Applicant, through site investigations, determines the site characteristics and evaluates those against the site parameters from the Standard Design Certification. Application of the QA Program to activities during this phase is the responsibility of the COL Applicant. Activities supporting the development of the following FSAR Sections were performed under the Appendix B QA Program, although not all of these activities are nuclear safety-related (SR).

2.1 Geography & Demography - Applicable to demographics data analysis for off-site dose calculations, population distribution and population density determinations.

2.2 Nearby Industrial, Transportation, and Military Facilities – Applicable to some calculations developed for Section 2.2.3 which are nuclear safety-related when performed to determine impact on the safe operation of the plant.

2.3 Meteorological - Applicable to the calculations of atmospheric dispersion factors (X/Q) and site-specific meteorological data characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design (such as maximum probable wind speed and precipitation) analysis.

2.4 Hydrological Engineering - Applicable to flooding analysis for probable maximum precipitation (PMP) storm (Section 2.4.2), probable maximum flood (PMF) calculations (Section 2.4.3), the dam failure flood calculation (Section 2.4.4), and site-specific hydrological data analysis.

2.5 Geology, Seismology, Geotech. Engineering - Applicable to site-specific seismic data analysis and calculations for structures, systems and components (SSC) design requirements.

3.5 Missile Protection - Applicable to aircraft hazards analysis, if required, and other required hazards analysis.

6.4 Habitability Systems - Applicable to the toxic gas analysis for control room habitability.

15.7 Radioactive Release - Radwaste tank rupture analysis is addressed in FSAR 2.4.13, per BTP 11-6 and SRP 2.4.13, as required but it is not nuclear safety-related.

Those activities were performed to support the COLA development under the TVA QA Program. TVA directly performed the flooding analysis for the dam failure flood calculation (Section 2.4.4). The remaining activities were performed for TVA under TVA QA Program oversight by NuStart and its subcontractors.

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Consistent with the description in FSAR Chapter 17, TVA does not plan to perform or have performed any additional safety-related activities prior to receipt of the COL, with the exception of those activities related to support of the COLA review by NRC, such as preparing responses to RAIs that may require additional analysis.

Phase 4, Site-specific Design Finalization – Detailed design for the site-specific SSCs is the responsibility of TVA. At this time, TVA does not plan to initiate this activity until after the receipt of the COL.

Phase 5, Engineering, Procurement, and Construction (EPC) – The activities in this phase include the completion/finalization of design, the procurement of materials and equipment and the site construction activities. These activities are under the responsibility of TVA and its QA Program. TVA currently does not plan to initiate these activities until after the receipt of the COL. This scope of this phase is very time dependent and directly relates to activities completed by WEC under Standard Design Finalization.

Phase 6, Fuel-load and Operation – The operational QA Program (as documented in the QAPD) is implemented for this phase. The operational QA Program will not be implemented prior to issuance of the COL.

This response is PLANT-SPECIFIC

ASSOCIATED BLN COL APPLICATION REVISIONS:

No COLA revisions have been identified associated with this response.

ATTACHMENTS/ENCLOSURES:

None

Enclosure
TVA letter dated June 11, 2008, 2008
RAI Responses

NRC Letter Dated: May 12, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 17.05-11

Section 17.1 of the Bellefonte FSAR states, in part, that the Quality Assurance Program Description (QAPD) discussed in Section 17.5 of the FSAR will become effective at COL issuance. Table 13.4-201, Operational Programs Required by NRC Regulations, states that the QA program – operation, which is discussed in FSAR section 17.5, will be implemented 30 days prior to the scheduled date for the initial loading of fuel. Since the QAPD discussed in Section 17.5 of the FSAR applies to construction/pre-operation and operation of Bellefonte Units 3 and 4, provide clarification as to when the QAPD discussed in FSAR section 17.5 will be actually implemented.

BLN RAI ID: 349

BLN RESPONSE:

As identified in FSAR Section 17.1, “The “Quality Assurance Program Description” (QAPD) discussed in Section 17.5 will become effective at COL issuance, and establishes the QA program requirements for the remaining portion of the design and construction phases.” FSAR Section 17.1 also identifies that “Construction activities at Bellefonte are not planned before the COL is issued.”

The QAPD discussed in Section 17.5 is the QAPD provided in Part 11 of the Bellefonte application. Implementation of that QA program will begin upon receipt of the COL. However, the operational programs in Table 13.4-201, Item 16. Quality Assurance Program – Operation identifies an implementation milestone of 30 days prior to scheduled date for the initial loading of fuel. This implementation milestone recognizes that portions of the QAPD are specific to operations activities. Examples of these operations related requirements are Part II Section 2.7, Section 3.4, and Section 6.1. Implementation of the QAPD will begin at COL Issuance for applicable portions of the program; however, as indicated in Table 13.4-201, full implementation of Operations related requirements is not expected until 30 days prior to fuel load.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 2, FSAR, Chapter 17, Section 17.1, will be revised as identified in the response to RAI question 17.05-01.

ATTACHMENTS/ENCLOSURES:

None