May 21, 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. 023 RELATED TO SRP SECTION 5.2.4 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 45 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. 76, 79, 80, and 81

Enclosure:
Request for Additional Information

CC: see next page

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Enclosure:
Request for Additional Information

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*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: 05.02.04 - Reactor Coolant Pressure Boundary Inservice Inspection and Testing
Application Section: 5.2.4

QUESTIONS from Component and Integrity Performance and Testing Branch 1

05.02.04-1
The AP1000 DCD, Section 5.2.6.2, assigned a COL Information Item, providing a commitment that the COL applicant's preservice inspection program will include specific preservice examinations of the reactor vessel closure head equivalent to those outlined in AP 1000 DCD Tier 2, Section 5.3.4.7. The Bellefonte FSAR adds supplemental information to the end of Subsection 5.2.4.3.1 describing the design of the RPV as it pertains to meeting the preservice inspection requirements for the RPV. Pursuant to Section 5.2.6.2 of the DCD, please discuss TVA's plans with respect to preservice inspection of the RPV closure head consistent with the examinations outlined in Section 5.3.4.7 of the DCD.

05.02.04-2
The AP1000 DCD, Section 5.2.4 and 10 CFR 50.55a(g)(4) require that components be designed to enable the performance of ASME Code-required preservice and inservice examinations. Bellefonte FSAR Section 5.2.4.8 states, "[t]he specific areas where the applicable ASME Code requirements cannot be met are identified after the initial examinations are performed." In addition, Section 5.2.4.3.1 (page 5.2-4) states that a relief request will be submitted for NRC approval if accessibility is limited for nozzle-to-shell welds. Because it is the staff's understanding that the previously learned lessons are incorporated into the design and will enable the performance of inservice examinations required by the ASME Code, please explain why there would be areas on the reactor vessel nozzle-to-shell welds where inservice examinations would be impractical and necessitate relief. In this discussion, please address whether any RV nozzle-to-shell weld access issues are present at this time when using the latest edition and addenda of the ASME Code, Section XI that is incorporated by reference in 10 CFR 50.55a (i.e., the 2001 Edition up to and including the 2003 Addenda). If so, address whether TVA considers access from inside the pressure vessel to be an option.

05.02.04-3
Discuss the details of TVA's program regarding preservice and inservice inspection (ISI) of Class 1 austenitic and dissimilar-metal welds, including with respect to monitoring for primary water stress-corrosion cracking. Specifically address the method and type of nondestructive examination, number and type of welds projected and two-sided access provisions. If two-sided access cannot be obtained to perform the same type of nondestructive examination method during inservice examination as performed during preservice examination, discuss how NRC regulations and the ASME Code ISI requirements will be met. Note that the Staff assumes that any relief from ISI of these susceptible welds on the basis of design, geometry, or materials of construction will not be necessary, since these factors can be rectified at the design stage before the plant is constructed.

05.02.04-4
Regulatory Guide 1.206, Section C.III.1, Chapter 5, Section C.I.5.2.4.2 defines the Preservice Inspection (PSI) Program as an operational program, as described in SECY-05-0197, such that the program and its implementation milestones should be fully described in terms of the scope and level of detail to allow for a reasonable assurance finding of acceptability. Bellefonte FSAR Section 5.2.4.9 states that preservice examinations required by design and documentation are in accordance with ASME Section III, NB-5281, and that volumetric and surface examinations are performed as specified in ASME Section III, NB-5282. It also states that components described in ASME Section III, NB-5283 are exempt from preservice examination. Please provide a more detailed description, including the scope of TVA's Preservice Inspection Program for ASME Code Class 1 components.