



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

July 23, 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

**BELLEVILLE COMBINED LICENSE APPLICATION – RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION – EQUIPMENT QUALIFICATION**

Reference: Letter from Ravindra B. Joshi (NRC) to Andrea L. Sterdis (TVA), Request for
Additional Information Letter No 048 Related to SRP Section 03.11 for the
Belleville Units 3 and 4 Combined License Application, dated June 20, 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 Thomas 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 23rd day of July, 2008.

Jack A. Bailey
Vice President, Nuclear Generation Development

Enclosure
cc: See Page 2

DO85
NRO

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cc: (Enclosures)

J. P. Berger, EDF
E. Cummins, Westinghouse
S. P. Frantz, Morgan Lewis
M. W. Gettler, FP&L
R. C. Grumbir, NuStart
P. S. Hastings, NuStart
P. Hinnenkamp, Entergy
R. G. Joshi, NRC/HQ
M.C. Kray, NuStart
D. Lindgren, Westinghouse
G. D. Miller, PG&N
M C. Nolan, Duke Energy
N .T. Simms, Duke Energy
G. A. Zinke, NuStart

cc: (w/o Enclosure)

B. C. Anderson, NRC/HQ
M.M. Comar, NRC/HQ
B. Hughes, NRC/HQ
R. H. Kitchen, PGN
M.C Kray, NuStart
A.M. Monroe, SCE&G
C. R. Pierce, SNC
R. Reister, DOE/PM
L. Reyes, NRC/RII
T. Simms, NRC/HQ
J. M. Sebrosky, NRC/HQ

Enclosure
TVA letter dated July 23, 2008
RAI Responses

Responses to NRC Request for Additional Information letter No. 048 dated June 20, 2008
(5 pages, including this list)

Subject: Equipment Qualification

<u>RAI Number</u>	<u>Date of TVA Response</u>
03.11-01	This letter – see following pages
03.11-02	This letter – see following pages
03.11-03	This letter – see following pages

Associated Additional Attachments / Enclosures

Pages Included

None

Enclosure
TVA letter dated July 23, 2008
RAI Responses

NRC Letter Dated: June 20, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 03.11-01

Section 3.11, "Environmental Qualification of Mechanical and Electrical Equipment," in the Final Safety Analysis Report (FSAR) of the combined license (COL) application for the Bellefonte Nuclear Plant, Units 3 and 4, incorporates by reference Subsection 3.11.2.2, "Environmental Qualification of Mechanical Equipment," in the AP1000 Design Control Document (DCD) Tier 2, which references Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment," to AP1000 DCD Tier 2. Please specify the process for implementation of the provisions for environmental qualification of safety-related mechanical equipment (such as by procurement specifications) with consideration of the acceptance criteria in SRP Section 3.11. Describe or provide a reference to the following information (or indicate the status of and schedule for its availability) related to the environmental qualification (EQ) operational program for mechanical equipment for the Bellefonte Nuclear Plant, Units 3 and 4, including (a) process to determine the suitability of environmentally sensitive mechanical equipment needed for safety-related functions and to verify that the design of such materials, parts, and equipment is adequate, such as (i) identifying safety-related mechanical equipment located in harsh environmental areas, (ii) identifying nonmetallic subcomponents of such equipment, (iii) identifying environmental conditions and process parameters for which this equipment must be qualified, (iv) identifying nonmetallic material capabilities, and (v) evaluating the environmental effects on the nonmetallic components of the equipment; and (b) documentation for the successful completion of qualification tests and/or analysis, and qualification status for each type of equipment.

BLN RAI ID: 0333

BLN RESPONSE:

The environmental qualification program will be performed as described in Section 3.11 and Appendix 3D of the AP1000 Design Control Document (DCD) Tier 2 by reference as stated in the Final Safety Analysis Report (FSAR) of the combined license (COL) application. The environmental qualification program will be implemented through the design specifications, equipment procurement documents and equipment qualification procedures. Equipment qualification specifications and equipment design specifications will be developed based on the AP1000 DCD environmental qualification requirements, which provide the equipment suppliers with detailed information to be used in the procurement of the safety-related equipment. The incorporation in the FSAR of AP1000 DCD Section 3.11 and Appendix 3D also includes future maintenance, surveillance and replacement activities to maintain environmental qualification over the life of the facility through operational programs and procedures.

Table 3.11-1 of the DCD provides a listing of the safety-related mechanical equipment, the location of the equipment and the qualification program environment required (item a.i). Appendix 3D of the AP1000 DCD provides the qualification methodology for the critical safety-related nonmetallic sub-components and provides qualification thermal and radiation information for the typical nonmetallic components used in safety-related mechanical equipment (items a.ii, a.iv, and a.v). Appendix 3D also provides the plant normal, abnormal and accident environmental parameters (item a.iii). Finally Appendix 3D provides the documentation requirements (item b).

Enclosure
TVA letter dated July 23, 2008
RAI Responses

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.

ATTACHMENTS/ENCLOSURES:

None

Enclosure
TVA letter dated July 23, 2008
RAI Responses

NRC Letter Dated: June 20, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 03.11-02

Subsection 3D.6.2.3, "Analysis of Safety-Related Mechanical Equipment," in Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment," to Chapter 3, "Design of Structures, Components, Equipment and Systems," in the AP1000 DCD summarizes the environmental qualification of safety-related mechanical equipment by analysis methods, but does not discuss implementation of the environmental qualification approach. For example, American Society of Mechanical Engineers Standard QME-1-2007, "Qualification of Active Mechanical Equipment used in Nuclear Power Plants," provides one approach for the environmental qualification of safety-related mechanical equipment. Discuss TVA's implementation of the environmental qualification approach, including the application of industry standards, prescribed in Subsection 3D.6.2.3, "Analysis of Safety-Related Mechanical Equipment," in Appendix 3D, "Methodology for Qualifying AP1000 Safety-Related Electrical and Mechanical Equipment," to Chapter 3, "Design of Structures, Components, Equipment and Systems," in the AP1000 DCD.

BLN RAI ID: 0334

BLN RESPONSE:

The environment qualification program will be performed as described in Section 3.11 and Appendix 3D of the AP1000 Design Control Document (DCD) Tier 2 by reference as stated in the Final Safety Analysis Report (FSAR) of the combined license (COL) application. The environmental qualification program will be implemented through the design specifications, equipment procurement documents and equipment qualification procedures. The incorporation in the FSAR of AP1000 DCD Section 3.11 and Appendix 3D also includes future maintenance, surveillance and replacement activities to maintain environmental qualification over the life of the facility through operational programs and procedures.

Equipment qualification specifications and equipment design specifications have been developed based on the AP1000 DCD environmental qualification requirements. Per the DCD, these procurement documents reference ASME QME-1-2002 and IEEE Std. 323-1974 for environmental qualification of active safety-related mechanical equipment.

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.

ATTACHMENTS/ENCLOSURES:

None

Enclosure
TVA letter dated July 23, 2008
RAI Responses

NRC Letter Dated: June 20, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 03.11-03

Subsection 3D.6.3, "Operating Experience in the Equipment Qualification Program," in Appendix 3D to Chapter 3 in the AP1000 DCD states that the COL applicant will provide documentation of the environmental qualification methodology where seismic experience data are used. If applicable, describe or provide a reference to the information (or indicate the status of and schedule for its availability) related to documentation of the environmental qualification methodology where seismic experience data are used.

BLN RAI ID: 0335

BLN RESPONSE:

This subsection of the AP1000 DCD has been revised as described in APP-GW-GLN-006, Revision 4 (TR-62), which was transmitted to the NRC by Westinghouse in Letter DCP/NRC2051 dated December 4, 2007. This subsection now states "Qualification by experience is not employed in the AP1000 equipment qualification program as a method of qualification." This change is also reflected in Revision 5 of APP-GW-GLR-134 (TR134) submitted by Westinghouse in Letter DCP/NRC2183 dated June 27, 2008.

The DCD subsection (as revised by TR134 Revision 5) continues to be incorporated by reference in the COLA FSAR. The necessary revision to the COLA is identified in the Application Revisions section below.

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

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 2, FSAR Chapter 1, Table 1.6-201, will be revised (Note that the # and Date were previously updated via Errata Report Rev. 2 item AP-STD-0223) from:

Westinghouse / TBD	AP1000 DCD Impacts to Support	4	All	March 2008
APP-GW-GLR-134	COLA Standardization			

To read:

Westinghouse / TBD	AP1000 DCD Impacts to Support	5	All	June 2008
APP-GW-GLR-134	COLA Standardization			

ATTACHMENTS/ENCLOSURES:

None