



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

June 27, 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 Nos. 52-014 and 52-015

**BELLEFONTE COMBINED LICENSE APPLICATION – RESPONSE TO REQUEST FOR
ADDITIONAL INFORMATION – FLOW-ACCELERATED CORROSION PROGRAM**

Reference: Letter from Brian Anderson (NRC) to Andrea L. Sterdis (TVA), Request for
Additional Information Letter No. 018 Related to SRP Section 10.03 for the
Bellefonte Units 3 and 4 Combined License Application, dated May 13, 2008.

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

A response to each NRC request in the subject letter is addressed in the enclosure and 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 27th day of June, 2008.

Sincerely,

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

Enclosure:
See Page 3

D085
NLO

Document Control Desk

Page 2

June 27, 2008

cc: (Enclosure)

B. C. Anderson, NRC/HQ
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
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)

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

Enclosure
TVA letter dated June 27, 2008
RAI Responses

Responses to NRC Request for Additional Information letter No. 018 dated May 13, 2008
(5 pages including this page)

Subject: Flow Accelerated Corrosion Program

<u>RAI Number</u>	<u>Date of TVA Response</u>
10.03.06-01	This letter – see following pages
10.03.06-02	This letter – see following pages
10.03.06-03	This letter – see following pages

Attachments / Enclosures

None

Pages Included

Enclosure
TVA letter dated June 27, 2008
RAI Responses

NRC Letter Dated: May 13, 2008

NRC Review of Final Safety Analysis Report

NRC RAI Number: 10.03.06-01

Standard COL Item 10.1-1, "Erosion-Corrosion Monitoring", is identified in FSAR Table 1.8-202 as a COL Holder item, and FSAR Section 10.1 provides a general description of the Bellefonte Units 3&4 flow-accelerated corrosion (FAC) program. To address the FAC concerns (originally identified as erosion-corrosion) discussed in Generic Letter 89-08, please discuss TVA's implementation schedule for the detailed program. What FAC program activities will be conducted during the plant construction phase, and what is the schedule for those activities.

BLN RAI ID: 0358

BLN RESPONSE:

The determination of FAC susceptible piping and components will be performed as design information and as-built field installation information is available with all systems and components evaluated for susceptibility prior to fuel load. System piping and/or components deemed to have a high risk of failure due to FAC will be evaluated for baseline testing prior to startup. Risk will be based on susceptibility to FAC and plant/personnel safety impact. For other piping, nominal pipe dimensions may be used in the computer analysis until actual baseline wall thickness measurements are obtained. The FAC Program as it relates to ASME Section XI pre-service baseline testing will begin approximately six (6) months prior to fuel load.

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 June 27, 2008
RAI Responses

NRC Letter Dated: May 13, 2008

NRC Review of Final Safety Analysis Report

NRC RAI Number: 10.03.06-02

Due to factors such as wall thickness tolerance in pipe fabrication and wall thinning due to bending, preservice measurements of as-built components considered susceptible to flow accelerated corrosion (FAC) are needed to accurately detect and assess inservice degradation. Some of the complications resulting from a lack of baseline thickness information are discussed in EPRI NSAC-202L-R2, the industry guideline document referenced in SRP Section 10.3.6. To demonstrate that an effective, long term FAC monitoring program is in place to address concerns discussed in NRC Generic Letter 89-08, please confirm that the program for erosion/corrosion and FAC monitoring will include preservice thickness measurements of as-built considered susceptible to FAC, and that these measurements will use grid locations and measurement methods most likely to be used for inservice inspection according to industry guidelines. In addition, please describe how these program criteria are documented in the COL application.

BLN RAI ID: 0359

BLN RESPONSE:

The site flow accelerated corrosion program is based on EPRI NSAC-202L-R3. The program requires a grid layout for obtaining consistent pipe thickness measurements when using ultrasonic test techniques. The FAC program obtains actual thickness measurements for highly susceptible FAC locations for new lines as defined in EPRI NSAC-202L-R3. At a minimum, a Pass 1 analysis is used for low and highly susceptible FAC locations and a Pass 2 analysis is used for highly susceptible FAC locations when the Pass 1 results warrant. To determine wear of piping and components where operating conditions are inconsistent or unknown the guidance provided in EPRI NSAC-202L-R3 is used to determine wear rates. FSAR Section 10.1.3.1 will be modified to reflect using the guidance of EPRI NSAC-202L-R3 and industry operating experience in the generation of flow accelerated program.

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

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 2, FSAR Subsection 10.1.3.1, last sentence of the paragraph will be revised from:

In addition, the FAC monitoring program considers the information of Generic Letter 89-08 and industry guidelines.

To read:

In addition, the FAC monitoring program considers the information of Generic Letter 89-08, EPRI NSAC-202L-R3, and industry operating experience. The program requires a grid layout for obtaining consistent pipe thickness measurements when using Ultrasonic Test Techniques. The FAC program obtains actual thickness measurements for highly susceptible FAC locations for new lines as defined in EPRI NSAC-202L-R3. At a minimum, a Pass 1 analysis is used for low and highly susceptible FAC locations and a Pass 2 analysis is used for highly susceptible FAC locations when the Pass 1 analysis results warrant. To determine wear of piping and components

Enclosure
TVA letter dated June 27, 2008
RAI Responses

where operating conditions are inconsistent or unknown, the guidance provided in EPRI NSAC-202L is used to determine wear rates.

ATTACHMENTS/ENCLOSURES

None

Enclosure
TVA letter dated June 27, 2008
RAI Responses

NRC Letter Dated: May 13, 2008

NRC Review of Final Safety Analysis Report

NRC RAI Number: 10.03.06-03

Subsection 10.1.3.1.1 of the Bellefonte FSAR states that the analytical method predicts the wear rate and the estimated time until a component must be re-inspected, repaired, or replaced. To ensure that the FAC concerns (originally identified as erosion-corrosion) discussed in NRC Generic Letter 89-08 are addressed in the application, please identify for components designed to the ASME Code Section III the industry guidelines or established procedure for determining the minimum allowable wall thickness at which the component must be repaired or replaced.

BLN RAI ID: 0360

BLN RESPONSE:

The Flow Accelerated Corrosion Program will be based on EPRI Recommendations for an Effective Flow Accelerated Corrosion Program (NSAC-202L-R3) and operating plant experience. A computer program, CHECWORKS (FAC) and / or equivalent will be used to predict FAC in single and two-phase power piping systems which can be modeled. Systems Not Modeled components will be addressed per EPRI recommendations.

The CHECWORKS or equivalent program provides statistical analysis of wall thinning based on field measurements. Based on these analyses, inspection intervals are set for upcoming outages and replacement or repair performed based on field confirmation.

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