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

February 10, 2009

10 CFR 52.79

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

In the Matter of) Docket No. 52-014 and 52-015
Tennessee Valley Authority)

BELLEFONTE COMBINED LICENSE APPLICATION – RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION – EMERGENCY PLANNING

References: 1) Letter from Brian C. Anderson (NRC) to Andrea L. Sterdis (TVA), Request for Additional Information Letter No. 122 Related to SRP Section 13.03 for the Bellefonte Units 3 and 4 Combined License Application, dated August 8, 2008

2) Letter from Andrea L. Sterdis (TVA) to NRC Document Control Desk, Response to Request for Additional Information – Emergency Planning, dated September 8, 2008

3) Letter from Andrea L. Sterdis (TVA) to NRC Document Control Desk, Response to Request for Additional Information – Emergency Planning, dated September 22, 2008

4) Letter from Andrea L. Sterdis (TVA) to NRC Document Control Desk, Response to Request for Additional Information – Emergency Planning, dated October 2, 2008

5) Letter from Andrea L. Sterdis (TVA) to NRC Document Control Desk, Response to Request for Additional Information – Emergency Planning, dated January 30, 2009

This letter provides the Tennessee Valley Authority's (TVA) supplemental responses to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) items included in the reference 1 letter. Previous responses and supplements have been provided in References 2 through 5. This supplement addresses NRC verbal requests for a tracking mechanism for the commitments included in previous responses.

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 Tom 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 10th day of Feb, 2009.

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

Enclosure
cc: See Page 3

cc: (w/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
B. Hughes, NRC/HQ
M. C. Kray, NuStart
D. Lindgren, Westinghouse
G. D. Miller, PG&N
M. C. Nolan, Duke Energy
N. T. Simms, Duke Energy
K. N. Slays, NuStart
G. A. Zinke, NuStart

cc: (w/o Enclosure)
M. M. Comar, 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. Reister, DOE/PM
L. Reyes, NRC/RII
T. Simms, NRC/HQ
J. M. Sebrosky, NRC/HQ

Enclosure
TVA letter dated February 10, 2009
RAI Responses

Responses to NRC Request for Additional Information letter No. 122 dated August 8, 2008
(27 pages, including this list)

Subject: Emergency Planning in the Final Safety Analysis Report

RAI Number	Date of TVA Response
13.03-18A, B	September 8, 2008; February 6, 2009
13.03-18C	September 8, 2008
13.03-18D, E	September 8, 2008; February 6, 2009; Supplemented by this letter – see following pages
13.03-19A, B, D-O	September 22, 2008
13.03-19C	September 22, 2008; Supplemented by this letter – see following pages
13.03-20A	September 22, 2008; February 6, 2009
13.03-20B, D, E	September 8, 2008
13.03-20C	October 2, 2008; February 6, 2009
13.03-21A-C	September 8, 2008
13.03-22A-C	September 8, 2008; February 6, 2009
13.03-22D	October 2, 2008
13.03-22E	September 22, 2008; February 6, 2009
13.03-23A, B	September 8, 2008
13.03-23C	October 2, 2008
13.03-24A	October 2, 2008; February 6, 2009
13.03-24B	October 2, 2008; February 6, 2009; Supplemented by this letter – see following pages
13.03-24C	September 22, 2008; February 6, 2009; Supplemented by this letter – see following pages
13.03-24D	October 2, 2008
13.03-25A, K, N, O, R	September 22, 2008
13.03-25B, L, M	October 2, 2008; Supplemented by this letter – see following pages
13.03-25C	September 8, 2008; September 22, 2008
13.03-25D, G-I, P	October 2, 2008
13.03-25E, F, S	September 8, 2008
13.03-25J	September 22, 2008; January 30, 2009
13.03-25Q	September 22, 2008; Supplemented by this letter – see following pages
13.03-26A, C	October 2, 2008
13.03-26B, F	September 22, 2008
13.03-26D, E	September 22, 2008; Supplemented by this letter – see following pages

13.03-27A	September 8, 2008; February 6, 2009
13.03-27B-E	October 2, 2008; Supplemented by this letter – see following pages
13.03-28A, B, D	September 22, 2008; Supplemented by this letter – see following pages
13.03-28C, E	September 22, 2008
13.03-28F	September 22, 2008; February 6, 2009
13.03-29A	September 8, 2008
13.03-29B	September 8, 2008; February 6, 2009
13.03-29C	September 8, 2008; Supplemented by this letter – see following pages
13.03-30A, B, D	September 8, 2008; February 6, 2009
13.03-30C	September 8, 2008
13.03-31A	September 8, 2008; February 6, 2009
13.03-31B	September 8, 2008
13.03-32A, B	September 22, 2008; February 6, 2009
13.03-33A	September 8, 2008; Supplemented by this letter – see following pages
13.03-33B	September 8, 2008
13.03-34	September 8, 2008
13.03-35	September 8, 2008
13.03-36A-C	September 8, 2008
13.03-37	September 8, 2008
13.03-38A, B	September 22, 2008
13.03-39A-D, G	September 8, 2008
13.03-39E, F	September 22, 2008

Associated Additional Attachments / Enclosures	Pages Included
No new attachments/enclosures	

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-18

SITE-1: Assignment of primary responsibilities for emergency response

Basis: 10 CFR 50.47(b)(1); 10 CFR 50, Appendix E.IV.A.8/ NUREG-0654/FEMA-REP-1, Evaluation Criterion A.1.a, Evaluation Criterion A.1.c, Evaluation Criterion A.1.d; Evaluation Criterion A.3

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criteria 1 and 18

A.–C. Responses previously provided.

D. Figure II-1, "Emergency Response Organization Interrelationships" of the BLN Emergency Plan is a block diagram that illustrates the interrelationships of all the organizations participating in emergency response. However, the diagram does not show specific State and local agencies or the U.S. Department of Energy (DOE), and the relationships are only shown by organization and not by position or title. Please clarify these aspects of the diagram. Provide the specific positions or titles that will interact during an emergency in Figure II-1. In addition, explain the meaning of the line and arrow coming from the Nuclear Regulatory Commission to the Field Monitoring teams in Figure II-1.

E. Appendix 7, "Certification Letters" of the BLN Emergency Plan includes copies of certification letters established between Tennessee Valley Authority (TVA) and the State and local government agencies and private sector organizations supporting the emergency response effort. Letters of Agreements are not provided in the BLN Emergency Plan. Discuss when the Letters of Agreement will be available and incorporated into the BLN Emergency Plan.

BLN RAI ID: 2982 (D), 3005(E)

BLN RESPONSE:

A.–C. Responses previously provided.

D. Evaluation Criteria II.A.1.a and b of NUREG-0654 pertain to organizations intended to be part of the emergency response effort. Subsequently, Evaluation Criterion II.A.1.c states that these interrelationships should be presented in a block diagram. The intent of Figure II-1 is to present the interrelationships of the response organizations. The positions/titles of the onsite organization are shown in Figure II-2. The Alabama Radiological Emergency Preparedness Plan, Section IV, Emergency Organization, identifies principals in charge of emergency response for state, county and local organizations that have radiological incident response responsibilities. << Specific title and position details will be included in the appropriate implementing procedures prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. >>

Section X.G of the Alabama Radiological Emergency Preparedness Plan, included in COLA Part 5, addresses communication and notification among TVA, State agencies and local agencies.

The roles of the U.S. Department of Energy (DOE) are discussed in Sections II.A and II.C of the BLN Emergency Plan. The interrelationships with the DOE will be included in Figure II-1 in a future revision of the COLA.

The line and arrow in question is meant to connect the TSC to the Field Monitoring Teams. The COL Application Emergency Plan will be modified such that the interactions presented in Figure II-1 will be clarified in a future revision of the COLA.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

E. SRP Acceptance Criterion 18 specifies that copies of letters of agreement *or other certifications* reflecting contacts and arrangements made with local, State, and Federal agencies with supporting emergency responsibilities should be included in a CP, OL, ESP or COL application and that the information should be up-to-date when the application is submitted.

The certifications provided in Appendix 7 were current as of the date of this application. << Updated Letters of Agreement will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. >> Such updated Letters of Agreement will be incorporated into future revisions of the BLN Emergency Plan in association with the updates to the Final Safety Analysis Report required by regulation.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-19

SITE-2: Onsite emergency response organization assignments

Basis: 10 CFR 50(b)(2), Appendix E.IV.A.2.b; NUREG-0654/FEMA-REP-1, Evaluation Criterion B.1, Evaluation Criterion B.3, Evaluation Criterion B.5, Evaluation Criterion B.7, Evaluation Criterion B.8, Evaluation Criterion B.9

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criteria 1 and 18

A.-B. Responses previously provided.

C. Subsection II.B.8, "Support from Contractor and Private Organizations" of the BLN Emergency Plan identifies information on the principal organizations in the private sector that are part of the overall response organization. However, specific organizations are not defined and only generic references to local volunteer fire departments and engineering and technical support services are listed. Section II.B.9, "Local Emergency Response Support," of the BLN Emergency Plan identifies that TVA has established and maintains agreements for local emergency response support services, including firefighting, rescue squad, medical and hospital services. Sections of this plan outline what the basic commitments of these local agencies are and these are also addressed in the certification letters in Appendix 7, "Certification Letters." Provide the names of the volunteer fire departments, designated engineering/technical services support firms and other consultants and vendors, as well as the supporting agreements, that might be requested to provide support during an emergency, or propose an associated ITAAC in place of the agreements.

D.-O. Responses previously provided.

BLN RAI ID: 2863

BLN RESPONSE:

A.-B. Responses previously provided.

C. Consistent with NUREG-0654/FEMA-REP-1, Section II.B.8 of the BLN Emergency Plan lists organizations that "may be requested to provide technical assistance to and augmentation of the emergency organization." In this context, the emergency organization under discussion is the onsite emergency organization, which is the topic of NUREG-0654/FEMA-REP-1, Planning Standard II.B. Although these organizations are identified to the extent they are currently known in the appropriate sections of the BLN Emergency Plan, TVA agrees that summation of this information in the organizational sections of the plan could enhance the clarity of the Plan. Therefore, consistent with the guidance provided in NUREG-0654, Section II.B.8 of the BLN Emergency Plan will be revised (as shown in the Application Revisions section below) to identify Hollywood Volunteer Fire Department, Highlands Medical Center Emergency Medical Services, and Westinghouse Electric Company. Other engineering and technical services support firms, as discussed in Section II.B.8, have not yet been identified. << Updated Letters of Agreement will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. >> Such updated Letters of Agreement will be incorporated into future revisions of the BLN Emergency Plan in association with the updates to the Final Safety Analysis Report required by regulation.

With regard to hospital support, REAC/TS and Huntsville Hospital provide offsite medical support, but TVA does not consider this support to "provide technical assistance to and augmentation of the emergency organization," as discussed in NUREG-0654/FEMA-REP-1, Evaluation Criterion II.B.8. Therefore, these organizations are correctly identified in BLN Emergency Plan Sections II.C.1 and II.C.4, respectively, with additional discussion provided in Section II.L.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

D.-O. Responses was previously provided.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-24

SITE-7: Distribution of public information
Basis: 10 CFR 50.47(b)(7); 10 CFR 50, Appendix E.IV.D.2; NUREG-0654/FEMA-REP-1; Evaluation Criterion G.1; Evaluation Criterion G.2; Evaluation Criterion G.3.b; Evaluation Criterion G.4.b
SRP ACCEPTANCE CRITERIA: Requirements A and B; Acceptance Criteria 1 and 2

A. Response previously provided.

B. Section II.G.2, "Distribution and Maintenance of Public Information," of the BLN Emergency Plan lists how written information may be provided to permanent residences and transient populations; explain the method and times necessary for public notification. Section II.G.1, "Public Information Program," states that information provided to the public includes educational information and information addressing special needs of the handicapped; address the specific information that will be in the material. A general statement is made in Section II.G.2 that information for transient populations may be provided; explain why these methods are appropriate for the type of transient populations that will occur in the Bellefonte Emergency Planning Zone (EPZ). Provide additional information related to method and times for public notification, detailed information to be included in public educational materials, and the specific methods of dissemination of information to determine if it is appropriate for the permanent populations and transient populations in the EPZ.

C. Describe how Section II.G.3, "News Media Coordination," of the BLN Emergency Plan addresses arrangements for exchange of information among designated spokespersons. Appendix 9, "Justification for CECC (Central Emergency Control Center)," states "State and utility staff at the JIC are responsible for providing timely and accurate information concerning an emergency to the media." Explain how timely and accurate information is provided to the media. Provide detailed information regarding the timely exchanges of information and identification of designated spokespersons and details on how timely and accurate information is provided to the media during an emergency.

D. Response previously provided.

BLN RAI ID: 2983 (B), 2873 (C)

BLN RESPONSE:

A. Response previously provided.

B. The response to item A above provides additional information regarding provision of emergency educational information to the permanent residents within the Bellefonte Nuclear Plant plume exposure pathway emergency planning zone (EPZ). Section II.G.2 of the Bellefonte Emergency Plan indicates that information for transient populations will be provided and may include public postings and publications provided in hotels, motels, and campgrounds. Attachment 13.03-24B is an example of the printed material provided to residences and commercial establishments in the Browns Ferry Nuclear Plant EPZ. << A publication (with content similar to emergency public information calendars distributed to residents living near other TVA nuclear plants) will be developed and distributed to residences and commercial establishments in the BLN plume exposure pathway EPZ prior to exceeding 5% of rated thermal power. The publication will contain information for persons with special needs. Pre-addressed, postage paid cards will be included in the annual publications. Directions will instruct those with special needs to complete and mail the cards. These cards will enable local emergency officials to maintain current lists of individuals who would need special assistance in the event of an emergency. >>

TVA also provides fixed information signs at public use areas, such as boat ramps, parks, and campgrounds, located within the plume exposure pathway EPZ. These signs provide information regarding the proximity of the facility, emergency notification methods, emergency response activities, sources of emergency information, and evacuation route markings. The information will be similar to the signs used for the Browns Ferry Nuclear Plant EPZ, a sample of which is provided in Attachment 13.03-24C. << Fixed information signs (similar to those provided for other TVA nuclear plants) will be posted at public use areas, such as boat ramps, parks, and campgrounds, located within the plume exposure pathway EPZ prior to exceeding 5% of rated thermal power. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

C. Section II.G.4 of the Emergency Plan addresses arrangements for the exchange of information among designated spokespersons. The public information responsibilities of emergency response personnel located at the plant site, the Central Emergency Control Center (CECC), and the Joint Information Center (JIC) are described in a corporate procedure applicable to TVA's operating nuclear plants. CECC-EPIP-14, "Nuclear Emergency Public Information Organization and Operations," is designed to describe the public information responsibilities of emergency response personnel located at the plant site, the CECC, and the Joint Information Center (JIC). It also describes how the JIC will be set up, staffed, and activated/deactivated when it is determined such a facility is necessary. Revision 30 of CECC-EPIP-14 is attached for informational purposes (Attachment 13.03-24A).

<< CECC EPIP-14 (or its equivalent) will be modified to incorporate BLN 3 and 4 when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

D. Response previously provided.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

Attachment 13.03-24B (previously provided)

Attachment 13.03-24C (previously provided)

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-25

SITE-8: Emergency facilities and equipment
Basis: 10 CFR 50(b)(8), Appendix E.IV.E.4; 10 CFR 50, Appendix E.VI. Emergency Response Data System; 10 CFR 50.47(b)(8), 10 CFR 50.34(f)(2)(xxv), 10 CFR 50.55a(h); NUREG-0654/FEMA-REP-1; Evaluation Criterion H.4; Evaluation Criterion H.6; Evaluation Criterion H.9; Evaluation Criterion H.10; Evaluation Criterion H.11; and NUREG-0696 and Supplement 1 to NUREG-0737
SRP ACCEPTANCE CRITERIA: Requirements A and B; Acceptance Criteria 1, 2, 4, 5, and 12

A. Response previously provided.

B. The ability to retrieve plant data and displays available in the control room, coupled with the sophisticated communications systems, preclude the need for frequent face-to-face interchange between the TSC and control room personnel. Appendix 6, "Emergency Equipment and Supplies," provides a general list of equipment located in the emergency response facilities (ERFs); provide additional information to describe how the supplies are adequate. Provide additional information on the protective equipment located in the TSC.

C.-K. Responses previously provided.

L. A general list of the types of radiological monitoring equipment provided for field monitoring team use is included in Appendix 6, "Emergency Equipment and Supplies." Provide additional information regarding the radiological equipment for field team use to explain its adequacy to support the field monitoring capability described in Section II.I.7, "Field Monitoring Capability."

M. Protective clothing and respirators are discussed in section II.J, "Protective Response." Communication is covered in sections II.E, "Notification Methods and Procedures," and II.F, "Emergency Communications." Provide additional information to explain the adequacy of protective clothing and respirators and communication equipment in the OSC.

N.-P. Responses previously provided.

Q. BLN Design Control Document (DCD), Tier 2, Chapter 7.7, "Control and Instrumentation Systems," discusses most of the plant control and instrumentation systems. BLN Final Safety Analyses Report (FSAR), Chapter 2.3.3, "Onsite Meteorological Measurement Programs," and Section II.H.8, "Meteorological Instrumentation and Procedures," of the BLN Emergency Plan discuss meteorological data collection, instrumentation, inspection, maintenance and other capabilities. DCD Tier 2, Chapter 11.5, "Radiation Monitoring," and Section II.I.2, "Plant Monitoring Systems," of the BLN Emergency Plan discuss radiation monitoring and plant monitoring systems. DCD Tier 2, Chapter 7, "Instrument and Controls," discusses containment parameter monitoring. BLN DCD Tier 1 Chapter 3.5, "Radiation Monitoring," describes area radiation monitors and their locations. Provide information to: 1) Verify that data points can be transmitted for reactor core and coolant system conditions; reactor containment conditions; radioactivity release rates; and plant meteorological tower data; 2) Verify that a separate data feed will be provided for each reactor unit. If the emergency response data system (ERDS) is to communicate with a safety system, verify that appropriate isolation devices will exist at these interfaces; 3) Verify that the system is capable of transmitting ERDS parameters in no more than 60 seconds or no less than 15 seconds; 4) Verify that the link control and data transmission is established in a compatible format with Nuclear Regulatory Commission (NRC) receiving equipment; 5) Verify that any hardware or software changes that affect the transmitted data points identified in the ERDS Data Point Library will be submitted to the NRC within 30 days after the changes are completed; 6) Verify that hardware and software changes that could affect the transmission format and computer communication protocol to the

ERDS will be provided to the NRC at least 30 days prior to the modification; 7) Verify that an ERDS implementation program plan has or will be submitted to the NRC.

R.-S. Response previously provided.

BLN RAI ID: 2874 (B), 2875 (L), 2876 (M), 2877 (Q)

BLN RESPONSE:

A. Response previously provided.

B. Inventories of protective equipment in the TSC are consistent with those identified in Browns Ferry EPIP-12, "Emergency Equipment and Supplies," which provides listings of emergency equipment and supplies typically provided to support emergency response organization activities. Browns Ferry EPIP-12 is provided for information as an attachment to this response (Attachment 13.03-25C).

Adequacy of the supplies and equipment is provided by establishment of initial types and quantities of supplies and equipment based on an assessment of:

- The positions to be staffed in the emergency response organization and their locations, responsibilities, activities, and technical, administrative and communications needs;
- The likely progression of individuals and teams through and near the facility during execution of their emergency response roles and the types and quantities of supplies and equipment needed to support execution of these activities;
- The current state of technology with regard to communications, monitoring and protective equipment;
- Interface points between the facilities and between the plant and its offsite support organizations; and
- The locations, types and quantities of supplies and equipment provided at TVA's existing nuclear facilities. These inventories have been refined through years of use during response to drills, exercises, and actual emergency conditions.

The ongoing adequacy of the supplies and equipment is provided by assessing feedback received during drills, exercises, and actual emergency events and from industry operational events. Inventories of supplies and equipment are modified as needed, consistent with this feedback.

Additional information is included in Section 7.2 of the TSC design description document (see Attachment 13.03-25A previously provided with TVA letter dated September 23, 2008).

<< Inventories of protective equipment in the TSC will be included in a BLN 3 and 4 EPIP addressing emergency equipment and supplies when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

C. – K. Responses previously provided.

L. As indicated in Appendix 6 of the Bellefonte Emergency Plan, TVA will establish and maintain inventories of emergency equipment and supplies. << Inventories of radiological monitoring equipment provided for field monitoring team use will be included in a BLN 3 and 4 EPIP addressing emergency equipment and supplies when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50.

Field teams will be provided instruments needed to perform direct radiation dose rate measurements, surface contamination surveys, and particulate and radioiodine air monitoring. >> For further information regarding emergency supplies and equipment, refer to the response to item B above.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

M. As indicated in Appendix 6 of the Bellefonte Emergency Plan, TVA will establish and maintain inventories of emergency equipment and supplies. << Inventories of protective equipment in the OSC will be included in a BLN 3 and 4 EPIP addressing emergency equipment and supplies when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. The OSC will be provided a variety of protective clothing (e.g., coveralls, boots, gloves, etc.) and respiratory protection equipment (e.g., full-face respirators with particulate filters and iodine cartridges, SCBAs, etc.) in order for the OSC to be able to perform assigned tasks. >> For further information regarding emergency supplies and equipment, refer to the response to item B above.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

N. – P. Responses previously provided.

Q. A variety of information on data systems and ERDS was requested in this section of the RAI. Specifically, information related to the following was requested:

1. Transmission of data points for reactor and core coolant system conditions; reactor containment conditions, radioactivity release rates; and plant meteorological tower data.
2. A separate data feed for each reactor unit and verification that if the emergency response data system (ERDS) is to communicate with a safety system, appropriate isolation devices will exist at these interfaces.
3. ERDS parameters can be transmitted in no more than 60 seconds or no less than 15 seconds.
4. Link control and data transmission in a compatible format with Nuclear Regulatory Commission (NRC) receiving equipment.
5. Hardware or software changes that affect the transmitted data points identified in the ERDS Data Point Library are submitted to the NRC within 30 days after the changes are completed.
6. Hardware and software changes that could affect the transmission format and computer communication protocol to the ERDS are provided to the NRC at least 30 days prior to the modification.
7. An ERDS implementation program plan will be submitted to the NRC.

Details regarding this information consider the design features of the AP1000 and are based on TVA's experience operating three other nuclear plant sites. The ERDS is to be developed on a schedule in compliance with the implementation requirements of 10 CFR Part 50, Appendix E, Section VI.

A schedule for submittal of the ERDS implementation program plan will be provided in accordance with the revision to proposed License Condition 6 as shown in the Applications Revision section below.

R.-S. Responses previously provided.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

COLA Part 10, Proposed License Condition 6, will be revised from:

a. This schedule shall include a submittal schedule for the emergency planning implementing procedures to the NRC consistent with 10 CFR Part 50, Appendix E, Section V.
b. This schedule shall include a schedule for the development of a site specific Severe Accident Management Guidance.
c. This schedule shall include a submittal schedule for the reactor vessel pressurized thermal shock evaluation at least 18 months prior to initial fuel load.
d. This schedule shall include a submittal schedule for approved preoperational and startup test procedures in accordance with FSAR Section 14.2.3.

To read:

This schedule shall include a submittal schedule for:

a. the emergency planning implementing procedures to the NRC consistent with 10 CFR Part 50, Appendix E, Section V.
b. the development of a site specific Severe Accident Management Guidance.
c. a reactor vessel pressurized thermal shock evaluation at least 18 months prior to initial fuel load.
d. approved preoperational and startup test procedures in accordance with FSAR Subsection 14.2.3.
e. an emergency response data system (ERDS) implementation program plan consistent with 10 CFR Part 50, Appendix E, Section VI.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

Attachment 13.03-25C (previously provided)

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-26

SITE-9: Plant systems and instrumentation
Basis: 10 CFR 50.47(b)(9); NUREG-0654/FEMA-REP-1; Evaluation Criterion I.1; Evaluation Criterion I.2; Evaluation Criterion I.3; Evaluation Criterion I.4; Evaluation Criterion I.5; Evaluation Criterion I.6; Evaluation Criterion I.7; Evaluation Criterion I.8; Evaluation Criterion I.10; Supplement 1 to NUREG-0737, Section 6.1.b. - Control Room; Post-accident sampling capability
SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criteria 1, 4, 5, 27 and 28

A.-C. Responses previously provided.

D. Section II.I.7, "Field Monitoring Capability," of the BLN Emergency Plan briefly describes the field monitoring capability. Implementing procedures provide guidance for field monitoring teams' performance of monitoring activities; however, the procedures are not available for review. Section II.I.8, "Assessing Hazards through Liquid or Gaseous Release Pathways," of the BLN Emergency Plan states that actual or potential magnitude and locations of radiological hazards are assessed by field teams consistent with the procedures of Section II.I.7. Implementing procedures provide guidance for field monitoring teams' performance of monitoring activities. However, the procedures are not available for review. Describe the capability to maintain monitoring teams in the field in the event of a protracted release and assessing hazards. Describe the maximum response capability and time required to reach this capability. List procedures related to field teams and summarize each.

E. Section II.I.10, "Relating Measured Parameters to Dose Rates," of the BNL Emergency Plan states that details of the capability to measure parameters to dose rates are set forth in Appendix 2, "Radiological Assessment and Monitoring," and involve use of the dose assessment models and procedures generally described in that appendix. Provide a specific list of procedures used to relate measured parameters to dose rates for key isotopes and for comparing integrated dose estimates with U.S. Environmental Protection Agency (EPA) protective action guides.

F. Response previously provided.

BLN RAI ID: 2879 (D), 2880 (E)

BLN RESPONSE:

A.-C. Responses previously provided.

D. Emergency Plan Implementing Procedures for the Bellefonte Nuclear Plant have not yet been written. CECC-EPIP-9, "Emergency Environmental Radiological Monitoring," describes radiological monitoring during or after an emergency at any of the operating TVA nuclear facilities. TVA expects to employ this or a similar procedure for the Bellefonte Nuclear Plant in the future. Topics discussed in this procedure include: activation; field operations; communications; electrical power supplies; air sampling; terrestrial samples; and operational readiness. TVA would typically dispatch two field monitoring teams at a Site Area or General Emergency. CECC-EPIP-9, Revision 35, has been attached for informational purposes. (Attachment 13.30-26A).

Maintaining monitoring teams for a protracted release would be handled on a situation-specific basis. Teams could be relieved at any time if individual dose limits are approached. Shift changes would be planned when shift duration is determined. Maximum response capability would be dictated based on the specific situation and is not pre-planned. TVA currently operates three nuclear facilities and could draw on trained radiation protection staffs from these facilities to support emergency response at any affected

nuclear facility. Off-site monitoring efforts are coordinated with the State of Alabama and may be augmented by Federal resources as discussed in the Emergency Plan. Timing required for augmented staffing of field teams is identified in Table II-2 of the Emergency Plan.

<< CECC EPIP-9 (or its equivalent) will be modified to incorporate BLN 3 and 4 when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

E. For TVA's operating nuclear plants, CECC-EPIP-8, "Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies," provides instructions for preparing Protective Action Recommendations. CECC-EPIP-1, "Central Emergency Control Center (CECC) Operations," CECC-EPIP-6, "CECC Plant Assessment Staff Procedure for Alert, Site Area Emergency, and General Emergency," and CECC-EPIP-7, "CECC Radiological Assessment Staff Procedure for Alert, Site Area Emergency, and General Emergency," discuss the necessary information to provide for prompt, accurate, public protective action recommendations to appropriate State authorities. The protective action recommendations logic diagram used by TVA includes radiological dose considerations and is provided in Appendix H of CECC-EPIP-1, Appendix C of CECC-EPIP-6, and Appendix A of CECC-EPIP-7.

CECC-EPIP-6, Revision 30 (Attachment 13.03-26B), CECC-EPIP-7, Revision 30 (Attachment 13.03-26C), CECC-EPIP-8, Revision 31, (Attachment 13.03-26D) are provided for informational purposes. CECC-EPIP-1 was provided in response to RAI 13.03-25, this letter.

<< CECC EPIP-1, CECC EPIP-6, CECC EPIP-7, and CECC EPIP-8 (or their equivalent) will be modified to incorporate BLN 3 and 4 when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

F. Response previously provided.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-27

SITE-10: Evacuation provisions and actions
Basis: 10 CFR 50.47(b)(10); NUREG-0654/FEMA-REP-1; Evaluation Criterion J.1; Evaluation Criterion J.2; Evaluation Criterion J.3; Evaluation Criterion J.5; Evaluation Criterion J.6; Evaluation Criterion J.10
SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 1

A. Response previously provided.

B. Section J.2, "Evacuation Routes and Transportation," states that evacuation routes are determined by Shift Manager/Site Emergency Director (SED), using available information on conditions. Provisions for evacuation of on-site individuals include evacuation by private automobile (15-30 minute high traffic density is not expected). Since preplanned routes are not identified (considering contingencies based on plant and radiological conditions), coordination with the State and local governments was not arranged. The security force will arrange transportation for those without cars. Provide information on what type of transportation the security force will have available to transport people without cars. The designated relocation site will have decontamination and contamination control capability and equipment. If the relocation center is not within the control of Tennessee Valley Authority (TVA), state when the letters of agreement will be available. In adverse conditions affected individuals will be directed to a safe on-site area (as determined by the SED). Explain why prearranged routes, coordinated with the State and local governments were not identified in the BLN Emergency Plan. Provide information identifying where the relocation center will be established. Additionally, if the relocation center is not within the control of TVA, state when the letters of agreement will be available.

C. Section J.2 of the BLN Emergency Plan addresses decontamination and contamination control capability and equipment that are available. Appendix 6 is a general list of the types of equipment available; provide details on what type of equipment is actually available, where it is stored, how often it tested and inventoried. According to Section J.2, the SED directs contamination monitoring of personnel, vehicles, and personal property arriving at the relocation site. Provide a summary of the decontamination capabilities and equipment sufficient to assess their adequacy, and provide information on the procedures and criteria used for personnel and other monitoring.

D. Section J.6, "Protective Measures," of the BNL Emergency Plan states that measures are taken to minimize ingestion and or inhalation of radionuclides to minimize exposure. Identify the measures used. Section J.6 states that self contained breathing apparatus (SCBAs) are used in locations where there is low oxygen or a fire. Other respiratory protection is available and issued by Radiation Protection or Safety and Health Services. Address training for use of SCBAs or other respiratory protection equipment. In addition, address the number of respirators available and the maintenance of the equipment. The criteria for use of protective clothing (PCs) are given; provide the location of the equipment and inventory to ensure that the PCs are available when needed. The use of radioprotective drugs (potassium iodide [KI]) is mentioned in the BLN Emergency Plan; identify the criteria for issuance, how and where it is stored and inventoried, and who makes the decision on issuance. In sum: provide a summary of the measures to be used and explain the adequacy of the measures used to minimize exposure, provide additional information on training in the use of respiratory equipment as well as the inventory and maintenance of the equipment and on storage and inventory of PCs, and provide criteria for issuance of KI, how and where it is stored and inventoried, and who makes the decision on issuance.

E. Appendix 4, "Evacuation Time Estimate," of the BLN Emergency Plan provides maps of evacuation routes, evacuation areas, and assumed locations of shelter areas and reception centers. Identify preselected radiological sampling and monitoring point locations. Provide the specific locations of the shelter areas

and the reception centers and the pre-identified monitoring locations or provide an Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) for when those locations will be identified.

BLN RAI ID: 2882 (B), 2883 (C), 2884 (D), 2885 (E)

BLN RESPONSE:

A. Response previously provided.

B. Affected individuals evacuate the site via personal vehicles. If an individual does not have access to personal transportation, either the affected individual or the Security Force makes arrangements for transportation with another evacuating individual.

Currently, there are two access/egress roads at the Bellefonte Nuclear Plant site. Each of these roads intersects U.S. 72. The south exit route intersects with U.S. 72 approximately 1.5 miles east of the Bellefonte Nuclear Plant. The north exit route intersects with U.S. 72 approximately 1.5 miles north of the site. << Details regarding the relocation center will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. These details will include the following activities. During an emergency requiring site evacuation, the appropriate evacuation route is determined based on a number of considerations including potential or existing radiological hazards, local weather conditions, traffic, etc. Upon determination of the appropriate evacuation route, the local authorities are notified of the designated route. The relocation center will be located in a manner that reduces the exposure of evacuating individuals to radiological hazards arising from the emergency condition. Consideration will also be given to prevailing traffic patterns and the effect of the plant evacuation on public evacuation activities. The relocation center will be provided with adequate facilities and equipment to accommodate expected activities, including registering and sheltering relocated individuals, parking of vehicles, monitoring individuals and vehicles, and providing decontamination services, if needed. >> These details will be established considering TVA's experience operating three other nuclear plant sites and the proximity of available facilities. If the relocation centers are not under the control of TVA, a Letter of Agreement will be provided.

<< Updated Letters of Agreement will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. >> Such updated Letters of Agreement will be incorporated into future revisions of the BLN Emergency Plan in association with the updates to the Final Safety Analysis Report required by regulation.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

C. At the Bellefonte Nuclear Plant, TVA expects to employ methods in use at its other operating nuclear power plants. In any emergency event, efforts are made to evacuate non-essential personnel prior to development of plant conditions that may expose these personnel to non-routine levels of radiation and radioactive materials. If radiological conditions warrant, radiation protection technicians are dispatched to site access control points established by security personnel. If radiological conditions warrant, technicians survey vehicles and personnel leaving the site using portable friskers or equivalent equipment as well as smear techniques for vehicles.

An example of the type of procedures that may be used for decontamination and contamination control in response to an emergency at the Bellefonte Nuclear Plant, TVA Browns Ferry EPIP-14, "Radiological Control Procedures," was previously provided for informational purposes (Attachment 13.03-24A with TVA letter dated September 23, 2008). EPIP-14 describes the actions and responsibilities of Radiation Protection (RP) personnel during a radiological emergency. The procedure contains instructions for RP personnel following declaration of an emergency. The procedure also contains instructions for RP personnel during Site Assembly and Evacuation and when operating the Alternate Personnel

Decontamination Facility. An equivalent procedure would be provided for the Bellefonte Nuclear Plant as indicated in BLN Emergency Plan, Appendix 6.

<< The actions and responsibilities of Radiation Protection (RP) personnel following declaration of an emergency and instructions for RP personnel during Site Assembly and Evacuation and when operating the Alternate Personnel Decontamination Facility will be included in the BLN 3 and 4 EPIP addressing decontamination and contamination control in response to an emergency when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

D. << Measures used to minimize exposure during an emergency will be included in the BLN 3 and 4 EPIP (or other appropriate procedure) addressing emergency actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. These measures will be consistent with practices at TVA's other operating nuclear power plants which currently include the following measures. At an Alert class of emergency or higher, Radiation Protection (RP) personnel periodically perform radiation, airborne (particulate and iodine), and contamination surveys of the assembly areas inside the Protected Area, if radiological conditions warrant. During a Site Area Emergency (SAE) or General Emergency (GE) RP personnel periodically perform radiation, contamination and airborne surveys as necessary to determine whether radiological hazards exist in on-site Emergency Response Facilities. Additionally, an RP technician accompanies any personnel dispatched into areas of potential radiological hazards during an Alert, SAE, or GE. Contaminated individuals are evacuated to another location for decontamination. Eating, drinking, smoking and chewing are prohibited in radiological areas. >>

Training requirements for TVA Nuclear personnel are established in a corporate training procedure applicable to the TVA nuclear facilities. The procedure establishes requirements for radiological respirator and SCBA training. Radiological Respirator Training is required only if the person is expected to use an air purifying or supplied air respirator. SCBA training is required only if the person is expected to use a self-contained breathing apparatus. In addition to training on specific respiratory protection equipment, individuals authorized to use respiratory protection must be medically qualified and pass a "fit test" for the equipment they are authorized to use. << The pertinent corporate training procedure will be modified to incorporate BLN 3 and 4 when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

TVA will provide a quantity and locations of SCBAs or other respiratory equipment to be used at the Bellefonte Nuclear Plant similar to those provided at the Browns Ferry Plant. These details will be established considering the design features of the AP1000 and based on TVA's experience operating three other nuclear plant sites. << The training for use of, and provisions for, SCBAs and other respiratory equipment to be used during an emergency will be included in a BLN 3 and 4 EPIP (or other appropriate procedure) addressing emergency actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. >>

Consistent with TVA's experience at its other operating nuclear power plants, protective clothing inventories are maintained in or in close proximity to the Operations Support Center (OSC) and inventories conducted each calendar year. For further information regarding emergency supplies and equipment, refer to the response to item B above. << Protective clothing inventories to be used during an

emergency will be included in a BLN 3 and 4 EPIP (or other appropriate procedure) addressing emergency actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. >>

TVA maintains corporate procedures regarding criteria for the issuance of Potassium Iodide (KI). In accordance with current TVA corporate procedures applicable to the TVA nuclear facilities, if field personnel are expected to receive a cumulative dose to the thyroid (from inhalation of radioactive iodine) which might exceed 10 rem, then a dose regimen of KI should be considered. Because Field Monitoring teams have the greatest potential need for thyroid blocking, KI should be administered at the time of initial dispatch. Authorization shall be provided by the most senior member of Radiation Protection available on a timely basis. Otherwise, current TVA corporate procedures authorize teams to self-administer KI in accordance with TVA Protective Action Levels included in corporate procedures. CECC-EPIP-9, "Emergency Environmental Radiological Monitoring," addresses the issuance of KI to field personnel. A copy of the current CECC-EPIP-9 was provided for informational purposes in response to RAI 13.03-26 above (previously provided with TVA letter dated September 23, 2008). << CECC EPIP-9 (or its equivalent) will be modified to incorporate BLN 3 and 4 when the EPIPs are provided to NRC, which will be at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50. >>

TVA's Browns Ferry EPIP-14, "Radiological Control Procedures," provides the process for issuing KI to onsite personnel during a radiological emergency. This process will be employed at the Bellefonte Nuclear Plant when operational. << The process for issuing KI to onsite personnel during a radiological emergency will be included in a BLN 3 and 4 EPIP (or other appropriate procedure) addressing radiological control actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. The current TVA practice is for the TSC RP Manager to order KI if dose projections indicate that site personnel could receive a committed dose equivalent to the thyroid in excess of 10 rem. Additionally, KI will be stored in an RP supply area and Radiological Emergency Plan Van instrument kits. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

E. TVA has determined the general areas where the shelter areas or reception centers for the Bellefonte Nuclear Plant may be located. << Details regarding the shelter areas and reception centers will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. Shelter areas and reception centers will be located in a manner that reduces the exposure of evacuating individuals to radiological hazards arising from the emergency condition. Consideration will also be given to prevailing traffic patterns and the effect of the area evacuation on public access to the facilities. Shelter areas and reception centers will be provided with adequate facilities and equipment to accommodate expected activities, including registering and sheltering relocated individuals, parking of vehicles, monitoring individuals and vehicles, and providing decontamination services, if needed. >> These details will be established considering TVA's experience operating three other nuclear plant sites and the proximity of available facilities. If the shelter areas and reception centers are not under the control of TVA, a Letter of Agreement will be provided.

<< Updated Letters of Agreement will be available for NRC inspection prior to the full participation exercise to be conducted in accordance with the requirements of 10CFR Part 50, Appendix E. >> Such updated Letters of Agreement will be incorporated into future revisions of the BLN Emergency Plan in association with the updates to the Final Safety Analysis Report required by regulation.

Preliminary, pre-identified radiological sampling and monitoring locations are identified on the attached map (Attachment 13.03-27A) and are summarized on the attached table (Attachment 13.03-27B).

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

Attachment 13.03-27A (previously provided)

Attachment 13.03-27B (previously provided)

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-28

SITE-11: Contamination control and dose limits
Basis: 10 CFR 50.47(b)(11); NUREG-0654/FEMA-REP-1; Evaluation Criterion K.1.a; Evaluation Criterion K.2; Evaluation Criterion K.3.a; Evaluation Criterion K.3.b; Evaluation Criterion K.5.a; Evaluation Criterion K.5.b; Evaluation Criterion K.6; Evaluation Criterion K.6.b; Evaluation Criterion K.6.c; Evaluation Criterion K.7
SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 1

A. In Section II.K of the BLN Emergency Plan, provide details of the Radiation Protection Program (RPP). Provide a summary of the portions of the occupational radiation protection programs outlined in the Final Safety Analysis Report (FSAR), the Design Control Document (DCD), NEI 07-08, and NEI 07-03 that are relevant to radiation protection during emergencies at BLN. Describe BLN exceptions, clarifications, and extensions to the RPP related to emergency conditions. List applicable procedures or provide an ITAAC to track when the list will be available.

B. Section II.K.3, "Dosimetry and Dose Assessment," of the BNL Emergency Plan states that "Station procedures establish guidance for wearers to periodically read their self-reading dosimeters...," and "TVA (Tennessee Valley Authority) maintains individual dose records in accordance with the requirements of 10 CFR 20 and the radiation protection program and its supporting procedures". Discuss the maintenance of dose records. List the procedures related to reading dosimeters and the maintenance of emergency worker dose records. Identify and discuss contingency plans for accessing dose records should post-accident conditions preclude normal access.

C. Response previously provided.

D. Section II.K.5, "Decontamination Action Levels," of the BNL Emergency Plan states that TVA implements procedures for decontamination of on-site emergency personnel wounds, etc., and refers to the general list of decontamination supplies found in Appendix 6, "Emergency Equipment and Supplies," of the BLN Emergency Plan. Describe any procedures related to decontamination of wounds, etc. Provide a list of procedures that address means available for decontamination of surfaces, equipment, and personnel. Describe plant facilities that provide the means for decontamination. Describe the means of handling wastes resulting from decontamination. Where will the emergency equipment and supplies be stored?

E.-F. Responses previously provided.

BLN RAI ID: 2886 (A), 2887 (B), 2888 (D)

BLN RESPONSE:

A. FSAR Appendix 12AA provides a summary of the BLN Radiation Protection Program (RPP). FSAR Table 13.4-201 addresses milestones associated with the Radiation Protection Program. FSAR Subsection 13.5.2.2.1 provides a discussion of Radiation Protection procedures. Part 10 of the COL Application discusses ITAAC associated with the Radiation Protection Program. The Emergency Plan need not include secondary information that is redundant with that provided in the Design Control Document, FSAR, and other portions of the COL application.

With regard to exceptions, clarifications, and extensions to the RPP related to emergency conditions, compliance with the site RPP is maintained, to the extent practical, under emergency conditions. Section II.K of the COL Emergency Plan describes processes for authorizing and implementing

emergency dose constraints consistent with EPA guidance. Appendix 5 of the COL Emergency Plan indicates that one of the topical areas to be addressed by Emergency Plan Implementing Procedures is "Radiation Protection Under Emergency Conditions." << The procedure or procedures in this topical area will address radiation protection issues that are specific to emergency conditions, such as area entry and exit requirements in the absence of radiological work permits, special survey requirements, suspension of routine administrative dose control levels, and specific respiratory protection and protective clothing requirements. Other variations from routine Radiation Protection procedures may be implemented on a case-by-case basis, consistent with ERO management direction and the provisions of 10 CFR 20.1001(b). These issues will be addressed in the BLN 3 and 4 EPIP (or other appropriate procedure). The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. >> FSAR Table 13.4-201 addresses milestones associated with emergency plan implementing procedures.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

B. << The process for determining and maintaining personnel dose records during a radiological emergency will be included in the BLN 3 and 4 EPIP (or other appropriate procedure) addressing radiological control actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. Under emergency conditions, immediate approximations of individual external radiation doses may be derived from readings of individual self-indicating dosimeters (e.g., pocket dosimeters, electronic dosimeters, or other devices as dictated by evolutions in dosimeter technology). Immediate assessments of internal radiation doses may be derived from correlation of air sample results with area occupation times. Records of individual dosimeter readings related to emergency response activities may be maintained on available log sheets or other record forms pending termination of emergency conditions and restoration of routine personal dosimeter reading, bioassay, and recordkeeping activities. Individual dose records are typically maintained on plant computer systems and are likely to be available throughout many emergency conditions. In the event that these records are not available under emergency conditions, Radiation Protection personnel may rely on an individual's knowledge of his current yearly accumulated dose prior to authorizing emergency assignments. >>

With regard to procedures addressing reading of dosimeters and maintenance of emergency worker dose records, the FSAR addresses Radiation Protection procedures as discussed in the response to item A of this RAI.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

C. Response previously provided.

D. With regard to procedures related to decontamination, the FSAR addresses the Radiation Protection program as discussed in the response to item A of this RAI.

AP1000 DCD Section 1.2 provides a description of plant facilities that provide the means for decontamination of both personnel and equipment and the means for handling of radioactive wastes. In Section 13.3.3.1 of NUREG-1793, NRC indicated that "information provided in the AP1000 DCD pertaining to the TSC, OSC, and decontamination room is consistent with the guidance identified in Regulatory Guide 1.101. Thus, the staff finds that the applicant's design meets the applicable requirements of 10 CFR 50.34(f)(2)(xxv), 10 CFR 50.47(b)(8), 10 CFR 50.47(b)(11), and Subsections IV.E.3 and IV.E.8 to 10 CFR Part 50, Appendix E."

<< The storage locations for emergency equipment and supplies that may be necessary during a radiological emergency will be included in a BLN 3 and 4 EPIP (or other appropriate procedure) addressing radiological control actions. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. TVA expects that the bulk of the equipment and supplies to be stored in the established emergency response facilities – the Control Room, TSC, and OSC. Additional supplies may be stored at locations expected to be convenient for use by emergency response personnel, such as within or adjacent to RCA access and egress areas and decontamination areas. Initial storage locations are determined based on an assessment of plant layout and TVA's operating plant experience; these locations may be changed based on assessments of plant emergency operations, drills, and exercises. >>

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

E.-F. Responses previously provided.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-29

SITE-12: Medical services for BLN workers and contaminated injured individuals

Basis: 10 CFR 50.47(b)(12); NUREG-0654/FEMA-REP-1; Evaluation Criterion L.1; Evaluation Criterion L..2;

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 1

A.-B. Response previously provided.

C. Section II.L.2, "On-Site First Aid Capability," of the BLN Emergency Plan discusses onsite first aid capability. Supplies are discussed in Appendix 6, "Emergency Equipment and Supplies." Address the location of the medical facilities (first aid stations), and provide a summary of the medical facilities available to respond to onsite medical emergencies.

BLN RAI ID: 2889 (C)

BLN RESPONSE:

A.-B. Responses previously provided.

C. The locations of first aid stations are not currently known. << The locations of first aid stations will be included in the appropriate BLN 3 and 4 procedure(s) addressing emergency medical actions at least 60 days prior to the scheduled date for exceeding 5% of rated thermal power. TVA expects to establish the locations of on-site first aid stations based on an assessment of plant layout, the locations of the Emergency Response Facilities, the likely work locations of emergency responders (especially members of the Medical Emergency Response Team) and its operating experience with its existing fleet of nuclear plants. >> For example, it is likely that basic first aid supplies and equipment would be located in or adjacent to areas where members of the plant staff undertake work activities involving significant hazards, such as the Auxiliary Building, Annex Building, Turbine Building, and Maintenance Building, and where significant numbers of employees are concentrated, such as the Administration Building and Training Building. Specific attention is provided for areas having special hazards, such as areas where hazardous chemicals are stored, handled, or used, and areas where fall hazards exist, such as adjacent to the Spent Fuel Pool and Reactor Cavity. Initial locations may be modified based on TVA's operating experience at the new facility, including experience in responding to emergency events and to drills and exercises as discussed in COL Emergency Plan Section II.N.

TVA expects to establish this central on-site location for medical-related activities (e.g., basic first aid, fitness for duty screening and related activities) and a source of higher level of medical assessment and care. << A central on-site location for medical-related activities will be included in the appropriate BLN 3 and 4 procedure(s) addressing emergency medical actions at least 60 days prior to the scheduled date for exceeding 5% of rated thermal power. This location would be the primary location for a plant nurse or other higher level on-site medical authority established consistent with TVA corporate policies. The location would also provide for stabilization and treatment of more seriously injured or ill individuals while awaiting transport to an off-site medical facility. >> Likely locations include the Administration Building or Maintenance Support Building.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

NRC Letter Dated: August 8, 2008

NRC Review of Final Safety Analysis Report

NRC RAI NUMBER: 13.03-33

SITE-16: Emergency preparedness program maintenance and implementing procedures

Basis: 10 CFR 50.47(b)(16); NUREG-0654/FEMA-REP-1; Evaluation Criterion P.7; Evaluation Criterion P.9; Evaluation Criterion P.10

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 1

A. Appendix 5, "Emergency Plan Implementing Procedures-Topical List," of the BLN Emergency Plan provides a topical listing of emergency plan implementing procedures (EPIPs) that support the plan. However, the BLN Emergency Plan refers to procedures that do not appear to be listed in the topical list. Provide information about procedures that are discussed in the BLN Emergency Plan, but not listed in Appendix 5.

The following is an example list of areas within the BLN Emergency Plan that state or imply that a procedure will be available:

- ERO position, title, position functions and major tasks (II.B.1 and B.5)

- Procedure for verifying messages (E.1. and E.3)

- Monthly station/CECC and state/local warning points (II.F.1)

- Periodic test of onsite communications systems (II.F.3)

- Relocation of the OSC (II.H.1)

- Staffing and activation of emergency response facilities (II.H.4)

- Procedure specifying instrument types and capabilities used to indicate emergency conditions (II.I.1)

- Procedures for obtaining samples under accident conditions (II.I.2)

- Methods for assessing and monitoring actual or potential onsite and offsite consequences (II.I 4)

- Procedures for estimating release rates and projected doses when associated instrumentation is inoperable or off-scale (II.I.6)

- Procedures for field team monitoring activities (II.I.7)

- Procedures to estimate projected dose rates and doses from measured parameters (II.I.10)

- Procedure for notification of onsite personnel of emergency conditions (II.J.1)

- Procedure for maintaining dose records (II.K.3.a)

- Procedures for recovery and reentry (II.M.1 and M.2)

- Performance indicators for extending the audit frequency to 24 months (II.P.9)

- Establishing TSC ventilation (Appendix 10)

- Procedures to analyze reactor coolant for boron, containment atmosphere for hydrogen and fission products, and containment sump water (DCD Tier 2, 9.3.3.1.2.2)

BLN RAI ID: 2890 (A)

BLN RESPONSE:

A. Appendix 5 of the COL Emergency Plan provides a list of broad topics to be addressed in the Emergency Plan Implementing Procedures (EPIPs). TVA did not intend for this list to be construed as a list of procedure titles or narrow subject areas. Each topical area may include one or more procedures. << The topics in the following table will be included in the BLN 3 and 4 EPIPs (or other appropriate procedure) addressing the identified topical area. The EPIPs will be provided to NRC at least 180 days prior to the scheduled date for initial fuel loading in accordance with Section V of Appendix E to 10CFR Part 50; if included in another procedure, the procedure will be available for NRC inspection at least 180 days before the scheduled date for initial fuel loading. >>

Procedure Subject (as provided in RAI)	**Related TVA Procedural Provisions Topical Area**
ERO position, title, position functions and major tasks (II.B.1 and B.5)	Within the scope of topical area "Activation of the Emergency Response Organization" as listed in Appendix 5.
Procedure for verifying messages (E.1. and E.3)	Within the scope of topical area "Notifications Associated with Emergency Conditions" as listed in Appendix 5.
Monthly station/CECC and state/local warning points (II.F.1)	Within the scope of topical area "Maintaining Emergency Preparedness" as listed in Appendix 5.
Periodic test of onsite communications systems (II.F.3)	Within the scope of topical area "Maintaining Emergency Preparedness" as listed in Appendix 5.
Relocation of the OSC (II.H.1)	Within the scope of topical area "Activation of the Emergency Response Organization" as listed in Appendix 5.
Staffing and activation of emergency response facilities (II.H.4)	Within the scope of topical area "Activation of the Emergency Response Organization" as listed in Appendix 5.
Procedure specifying instrument types and capabilities used to indicate emergency conditions (II.I.1)	Within the scope of topical area "Emergency Classification" as listed in Appendix 5.
Procedures for obtaining samples under accident conditions (II.I.2)	Within the scope of Chemistry Department procedures.
Methods for assessing and monitoring actual or potential onsite and offsite consequences (II.I 4)	Within the scope of topical area "Plume Tracking and Assessment of Off-Site Radiological Conditions" and "Core Damage Assessment" as listed in Appendix 5.
Procedures for estimating release rates and projected doses when associated instrumentation is inoperable or off-scale (II.I.6)	Within the scope of topical area "Plume Tracking and Assessment of Off-Site Radiological Conditions" and "Core Damage Assessment" as listed in Appendix 5.
Procedures for field team monitoring activities (II.I.7)	Within the scope of topical area "Plume Tracking and Assessment of off-Site Radiological Conditions" as listed in Appendix 5.
Procedures to estimate projected dose rates and doses from measured parameters (II.I.10)	Within the scope of topical area "Plume Tracking and Assessment of off-Site Radiological Conditions" as listed in Appendix 5.
Procedure for notification of onsite personnel of emergency conditions (II.J.1)	Within the scope of topical area "Notifications Associated with Emergency Conditions" as listed in Appendix 5.

Procedure Subject (as provided in RAI)	**Related TVA Procedural Provisions Topical Area**
Procedure for maintaining dose records (II.K.3.a)	Within the scope of topical area "Radiation Protection Under Emergency Conditions" as listed in Appendix 5.
Procedures for recovery and reentry (II.M.1 and M.2)	Within the scope of topical area "Recovery and Reentry" as listed in Appendix 5.
Performance indicators for extending the audit frequency to 24 months (II.P.9) -	Within the scope of topical area "Maintaining Emergency Preparedness" as listed in Appendix 5.
Establishing TSC ventilation (Appendix 10) -	Within the scope of topical area "Activation of the Emergency Response Organization" as listed in Appendix 5.
Procedures to analyze reactor coolant for boron, containment atmosphere for hydrogen and fission products, and containment sump water (DCD Tier 2, 9.3.3.1.2.2) -	Within the scope of Chemistry Department procedures.

The above statement(s) included within the << double arrows >> are considered to be commitments (as discussed in NEI 99-04) by TVA to the NRC and will be tracked for implementation.

This response is PLANT-SPECIFIC.

ASSOCIATED BLN COL APPLICATION REVISIONS:

Associated BLN COL application revisions were previously provided and have since been incorporated into Part 5 of the COL application, EP Revision 1.

ASSOCIATED ATTACHMENTS/ENCLOSURES:

None

Attachments
TVA letter dated February 10, 2009
RAI Responses

Attachments previously provided.

No new Attachments with this supplement.