



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

September 8, 2008

10 CFR 52.79

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

In the Matter of )  
Tennessee Valley Authority )

Docket No. 52-014 and 52-015

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

Reference: 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

This letter provides the Tennessee Valley Authority's (TVA) responses 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 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 8<sup>th</sup> day of Sep, 2008.

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

Enclosure  
cc: See Page 2

DOBS  
NRO

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

Subject: Emergency Planning in the Final Safety Analysis Report

<u>RAI Number</u>	<u>Date of TVA Response</u>
13.03-18A-E	This letter – see following pages
13.03-19A-O	Future – expected submittal by September 22, 2008
13.03-20A, C	Future – expected submittal by September 22, 2008
13.03-20B, D, E	This letter – see following pages
13.03-21A-C	This letter – see following pages
13.03-22A-C	This letter – see following pages
13.03-22D-E	Future – expected submittal by September 22, 2008
13.03-23A-B	This letter – see following pages
13.03-23C	Future – expected submittal by September 22, 2008
13.03-24A-D	Future – expected submittal by September 22, 2008
13.03-25A-B, D, G-R	Future – expected submittal by September 22, 2008
13.03-25C, E, F, S	This letter – see following pages
13.03-26A-F	Future – expected submittal by September 22, 2008
13.03-27A	This letter – see following pages
13.03-27B-D	Future – expected submittal by September 22, 2008
13.03-28A-F	Future – expected submittal by September 22, 2008
13.03-29A-C	This letter – see following pages
13.03-30A-D	This letter – see following pages
13.03-31A-B	This letter – see following pages
13.03-32A-B	Future – expected submittal by September 22, 2008
13.03-33A-B	This letter – see following pages
13.03-34	This letter – see following pages
13.03-35	This letter – see following pages
13.03-36A-C	This letter – see following pages
13.03-37	This letter – see following pages
13.03-38A-B	Future – expected submittal by September 22, 2008
13.03-39A-D, G	This letter – see following pages
13.03-39E-F	Future – expected submittal by September 22, 2008

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Associated Additional Attachments / Enclosures

Attachment 13.03-22A

Attachment 13.03-30A

Pages Included

4 pages

18 pages

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**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. Section II.A, "Assignment of Responsibility (Organizational Control)," of the BLN Emergency Plan provides a list of participating organizations and a discussion of their roles and responsibilities. Identify the specific county governments and organizations that will respond to an emergency event.

B. Section II.A, of the BLN Emergency Plan defines assignment of responsibility. However, the BLN Emergency Plan does not provide the title of officials responsible for planning, ordering and controlling protective actions. Identify, by title, the State and/or local officials that will be responsible for implementing offsite protective actions.

C. Section II.A, of the BLN Emergency Plan states in the text that the Shift Manager assumes the role of the Site Emergency Director (SED), however Footnote 2 uses the term Emergency Coordinator. Clarify terminology discrepancy between text identifying the Shift Manager as the Site Emergency Director and the Footnote 2 use of the term Emergency Coordinator.

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: 1140 (A), 1325 (B), 1327 (C), 1328 (D), 1329 (E)**

**BLN RESPONSE:**

A. The Jackson and DeKalb County Radiological Emergency Plans (Basic Plans) list the primary and support agencies that will respond to an emergency at BLN. These proposed plans were submitted as supplemental information with Part 5 of the COLA. These plans identify Jackson and DeKalb County Emergency Management Agencies as the primary agencies responsible for overall coordination of a response to an emergency at BLN for their respective counties. Additionally, Section IV.A of each of these Plans discusses local agencies responsible for providing emergency response activities.

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The following table lists primary and supporting agencies in Jackson and DeKalb Counties:

<b>Jackson County Response Organizations</b>	<b>DeKalb County Response Organizations</b>
<b>Primary Agency</b>	<b>Primary Agency</b>
Jackson County Emergency Management Agency	DeKalb County Emergency Management Agency
<b>Supporting Agencies</b>	<b>Supporting Agencies</b>
Jackson County Health Department	DeKalb County Health Department
Ambulance and Medical Services of Jackson County	DeKalb Ambulance Service
Department of Human Resources	Department of Human Resources
Boards of Education of Jackson County	DeKalb County Schools
Jackson County Sheriff's Department	DeKalb County Sheriff's Department
Jackson County Association of Fire Department's	DeKalb County Volunteer Fire Department
Rescue Squads of Jackson County	American Red Cross
Jackson County E-911	DeKalb County Rescue Squad
Hollywood Police Department	
Scottsboro Police Department	

B. The Alabama Radiological Emergency Preparedness Plan, Section IV, Emergency Organization, identifies principals in charge of emergency response for county and local organizations that have radiological incident response responsibilities. In addition, Section V of the Proposed Jackson County Radiological Emergency Plan and Section V of the DeKalb County Radiological Emergency Plan (Basic Plans) each indicate that the Directors of the respective county Emergency Management Agency will exercise direction and control activities and become the Incident Commanders upon implementation of the Proposed County Plans.

The Alabama Office of Radiation Control is responsible for providing protective action recommendations to protect the public from incidents involving radioactive materials from a nuclear plant. As discussed in Section V.A of the Alabama Radiological Emergency Preparedness Plan, the Governor of the State of Alabama has the overall responsibility for emergency preparedness and response concerning an incident at a nuclear power plant. The Governor has charged the Alabama Emergency Management Agency Director with the responsibility of coordinating the activities of the departments, agencies, and organizations of state government and local emergency management agencies to carry out emergency functions relating to a nuclear power plant incident.

C. The Shift Manager assumes the role of the Site Emergency Director and determines if activation of the emergency response facilities is desirable or required based on an assessment of plant conditions. The COL Application Emergency Plan will be corrected such that the term Emergency Coordinator will be replaced by Site Emergency Director in Footnote 2 in a future revision of the COLA. In addition,

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Figure II-2 will be revised to replace the term Emergency Coordinator with the term Site Emergency Director.

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. When additional details regarding specific titles or positions are available, they will be provided, as necessary, to support timely completion of NRC inspection and audit functions.

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.

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. Any updated certifications or Letters of Agreement that are received will be incorporated into future revisions of the BLN Emergency Plan.

This response is PLANT-SPECIFIC.

#### **ASSOCIATED BLN COL APPLICATION REVISIONS:**

1. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan, Section II.A, Footnote 2 will be revised from:

Emergency Coordinator

To read:

Site Emergency Director

2. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan, Figure II-2 will be revised as follows:

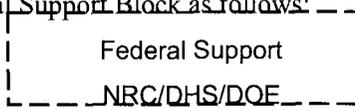
Emergency Coordinator (TSC)

To read:

Site Emergency Director (TSC)

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3. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan, Figure II-1 will be revised to add DOE to the Federal Support Block as follows:



4. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan, Figure II-1 will be revised to indicate the Field Monitoring Teams report back directly to the TSC.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-20**

**SITE-3:** Requesting, using and accommodating emergency response support resources

Basis: 10 CFR 50.47(b)(3); Planning Standard C; NUREG-0654/FEMA-REP-1; Evaluation Criterion C.1.a; Evaluation Criterion C.1.b; Evaluation Criterion C.3, Evaluation Criterion C.4

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

A. Section II.C, "Emergency Response Support and Resources," of the BLN Emergency Plan describes arrangements for Federal emergency response support and resources. Explain the criteria for when the federal assets [Federal Coordination Agency, DOE Radiological Assistance Program, Radiation Emergency Assistance Center/Training Site (REAC/TS)] will be requested and summarize the process for the requests.

B. Section II.A.1.b, "Concept of Operations - DHS/FEMA," of the BLN Emergency Plan addresses the National Response Plan, rather than the National Response Framework (NRF) that has now been implemented. Address the implementation of the NRF in the BLN Emergency Plan.

C. Section II.C.3, "Radiological Laboratories," of the BLN Emergency Plan states that the station has mobile monitoring and assessment capabilities in addition to fixed facilities for gross counting and spectral analysis. There is no additional detail on the location and abilities of the fixed facilities. The BLN Emergency Plan also states that other Tennessee Valley Authority (TVA) facilities could provide additional support within 1-4 hour, but those facilities are not identified nor are the criteria for when the support would be requested or how it would be requested. Summarize the location and capabilities for the fixed radiological facilities located at the BLN site. In addition, provide a list of the facilities within the TVA system that may be used during an emergency at BNL as well as the process for requesting the additional support.

D. Section II.C.4, "Other Supporting Organizations," of the BLN Emergency Plan identifies additional emergency response support from: INPO Fixed Nuclear Facility Voluntary Assistance Agreement signatories, \*Huntsville Hospital, \*Hollywood Volunteer Fire Department, \*Highlands Medical Center Emergency Medical Services, Westinghouse and REAC/TS. Certification letters are provided for the organizations marked with an "\*" in Appendix 7, "Certification Letters." No letters of agreement were found for Institute of Nuclear Power Operations (INPO), Westinghouse or REAC/TS. (Note: Section II.A.1.b, "DHS/FEMA," states that "...responsibilities of many Federal agencies are established in the National Response Plan and therefore no certification letters are required..." and Section II.L.1, "Hospital and Medical Support," states "TVA maintains an agreement with REAC/TS in Oak Ridge, TN...") Provide letters of agreement or other appropriate supporting documentation related to the emergency assistance provided by INPO, Westinghouse and REAC/TS.

E. Subsection 1.a, "Federal Response Capability," of Section II.C "Emergency Response Support and Resources" states: "The EOF Director or Radiological Assessment Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency)." However, requesting federal assets such as the FRMAC should be coordinated through the state based on the situation and on other factors such as a state and federal disaster declaration or similar action. In accordance with the National Response Framework, the request process for federal assistance should be as follows: utility to state; state to FEMA; FEMA to DOE; DOE to FRMAC, with all information to the NRC. If there is no disaster declaration, the NRC, as the Coordinating Agency under the Nuclear/Radiological Incident Annex of the National Response Framework, would contact DOE. The decision to deploy the FRMAC is coordinated

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between DOE and FEMA. Discuss whether paragraph subsection C.1.a should be revised, and if not, why.

**BLN RAI ID: 1346 (B), 1348 (D), 1349 (E)**

**BLN RESPONSE:**

- A. Response to be provided at a later date.
- B. The National Response Plan was replaced by the National Response Framework effective March 22, 2008, following submittal of the Bellefonte Nuclear Plant Units 3 & 4 Combined License Application in October 2007. Implementation of the NRF will be addressed in Section II.A.1.b of Part 5 in a future revision of the COLA.
- C. Response to be provided at a later date.
- D. Appendix 7 will be revised in a future revision of the COLA to indicate that these Letters of Agreement will be available and incorporated into the BLN Emergency Plan prior to receipt of nuclear fuel at the site.
- E. Evaluation Criterion II.C.1.a. of NUREG-0654/FEMA-REP-1 indicates that the licensee Emergency Plan should designate "specific persons by title authorized to request Federal assistance..." The Bellefonte COL Emergency Plan correctly indicates that the persons responsible for requesting Federal assistance are the CECC Director and Radiological Assessment Manager. However, the COL Emergency Plan is incorrect in stating that these individuals may request FRMAC assistance directly. Consistent with the National Response Framework, the processes for requesting FRMAC assistance may vary depending on whether or not a disaster declaration has been issued. As indicated in Table 3 of the Nuclear/Radiological Incident Annex of the NRF, the request for FRMAC assistance could originate with the coordinating agency (NRC) or with State, tribal, or local governments. Therefore, any TVA request for Federal assistance would be directed to the NRC from the CECC Director or Radiological Assessment Manager. Part 5 Subsection II.C.1.a will be clarified accordingly in a future revision of the COLA.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

- 1. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Section II.A.1.b, second paragraph under the heading DHS/FEMA will be revised from:

National Response Plan

To read:

National Response Framework

- 2. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Section II.A.1.e.3, second paragraph will be revised from:

National Response Plan

To read:

National Response Framework

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3. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Section II.C.1.a will be revised from:

The CECC Director or Radiological Assessment Manager may request FRMAC assistance directly or through the NRC (Federal Coordinating Agency).

To read:

The CECC Director or Radiological Assessment Manager may request FRMAC assistance through the NRC (Federal Coordinating Agency).

4. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Section III, References and Appendices, Reference 5 will be changed from:

U.S. Department of Homeland Security, "National Response Plan," December 2004

To read:

U.S. Department of Homeland Security, "National Response Framework," January 2008

5. COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Appendix 7 will be revised to include the following information:

A Letter of Agreement with the Institute of Nuclear Power Operations (INPO) will be included in this Appendix prior to receipt of nuclear fuel at the site.

A Letter of Agreement with the Westinghouse Electric Company (WEC) will be included in this Appendix prior to receipt of nuclear fuel at the site.

A Letter of Agreement with the Radiation Emergency Assistance Center/Training Site (REAC/TS) will be included in this Appendix prior to receipt of nuclear fuel at the site.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-21**

**SITE-4: Emergency Classification System**

Regulatory Basis: 10 CFR 50.47(b)(4) and Sections IV.B. and C. of Appendix E to 10 CFR Part 50.  
Reference: NUREG-0654/FEMA-REP-1 Evaluation Criterion D.1

SRP ACCEPTANCE CRITERIA: Requirement 2; Acceptance Criterion 3

A. Section II.D, "Emergency Classification System," of the BLN Emergency Plan states that the initiating conditions include the conditions provided in NEI 07-01, Rev. 0, "Methodology for Development of Emergency Action Levels, Advanced Passive Light Water Reactors" (NEI 07-01). However, NEI 07-01 was submitted for NRC review and endorsement in March 2008, and currently remains under review by the NRC staff. Emergency Action Levels (EALs) and initiating conditions (ICs), based upon the September 2007 draft of NEI 07-01, are included in the BLN Emergency Plan as Appendix 1, "Emergency Action Levels." Since NEI 07-01 has not been endorsed by the NRC, and the staff cannot cross-check EAL Recognition Categories (RCs) and Initiating Conditions (ICs) as currently referenced, justify why this reference should be retained.

B. The Letters of Certification with state and local governments that are included in Appendix 7, "Certification Letters," of the BLN Emergency Plan state that the signature on the letter indicates that the parties concurred with the emergency classification system, initiating conditions, and emergency action levels for Bellefonte. EALs and initiating conditions, based upon the September 2007 draft of NEI 07-01, are included in the BLN Emergency Plan as Appendix 1, "Emergency Action Levels." However, NEI 07-01, "Methodology for Development of Emergency Action Levels, Advanced Passive Light Water Reactors," Rev. 0, has not been endorsed by the NRC. Discuss when the final version of the initial emergency action levels will be discussed with, and agreed upon, with state and local governmental authorities.

C. Discuss when the content of subsection 5.3, "Site-specific Implementation," in Section 5.0, "Emergency Action Levels," of Appendix 1 to the BLN Emergency Plan will be provided. Will an ITAAC or License Condition be developed to track the submittal of this information?

**BLN RAI ID: 1143 (A), 1330 (B), 1331 (C)**

**BLN RESPONSE:**

A. Subsection II.D.2 of the Bellefonte Nuclear Plant, Units 3 & 4 COL Application Emergency Plan, Rev. 0, states, "This section incorporates by reference NEI 07-01, 'Methodology for Development of Emergency Action Levels, Advanced Passive Light Water Reactors,' Rev.0, dated [to be provided], ADAMS No. [to be provided]." The September 2007 version of NEI 07-01 was the best and only information regarding AP1000 EALs available to TVA at the time of COL application submittal. Regulatory Guide 1.206, section C.1.13.3 provides, "It is expected that any new application will use an emergency action level (EAL) scheme similar to that described in Revision 4 of Nuclear Energy Institute (NEI) 99-01, 'Methodology for Development of Emergency Action Levels,' issued January 2003, which was endorsed in Revision 4 of RG 1.101. However, Revision 4 of NEI 99-01 is not considered to be entirely applicable to advanced LWR designs. Even though the majority of Revision 4 of NEI 99-01 may be applicable to any reactor design and should be used, the unique characteristics of the new reactor should be addressed in the development of EALs specific to the new plant and the site." NEI 07-01 was

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developed to satisfy the concern stated in Regulatory Guide 1.206 that NEI 99-01, Rev. 4, did not apply to advanced light water reactor designs. NEI 07-01 specifically applies to the Westinghouse AP1000 and GE Hitachi ESBWR designs. By reserving the actual publication date and ADAMS No. for NEI 07-01 (i.e., “[to be provided]”), TVA has indicated an intent to update the EALs presented in Section II.D and Appendix 1 after NEI 07-01 has received NRC endorsement. TVA will update the emergency classification system presented in the Bellefonte Nuclear Plant, Units 3 & 4 COL Application Emergency Plan to be consistent with the version of NEI 07-01, Rev. 0, that is endorsed by NRC at some future date.

B. NEI 07-01 is not relevant to the State of Alabama and local jurisdictions concurrence with the proposed emergency classification system, initiating conditions, and emergency action levels. Appendix 1 provides details on the emergency classification system, including specific EALs with ICs. Each agency providing a Certification Letter has indicated its concurrence with this emergency classification system, EALs and ICs described in the COL Application Emergency Plan. This is consistent with the requirements of Section IV.B of Appendix E to 10 CFR Part 50 that requires State and local agencies responsible for emergency planning to concur with the emergency classification system, EALs and ICs. When any changes are made to the emergency classification system, EALs, and ICs, as might be expected when NEI 07-01 is endorsed by NRC, these changes will need to be reviewed with the affected offsite agencies and their concurrence appropriately documented to satisfy the pertinent regulatory requirements.

C. Section 5.3 of Appendix 1 is shown as “Reserved.” Section 2.0 is also “Reserved.” The designation “Reserved” is used to denote possible future use and to preserve formatting used in NEI 07-01. There is no plan to include additional information in Section 5.3, at this time, so neither an ITAAC nor a License Condition is appropriate.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-22**

**SITE-5:** Activation and notification processes

Basis: 10 CFR 50.47(b)(5); 10 CFR 50, Appendix E.IV.C; 10 CFR 50, Appendix E.IV.D.1; NUREG-0654/FEMA-REP-1; Evaluation Criterion E.3; Evaluation Criterion E.4; Evaluation Criterion E.7

SRP ACCEPTANCE CRITERIA: Requirements A and B; Acceptance Criteria 1, 2 and 6

A. Clarify the second paragraph of Section II.E, "Notification Methods and Procedures," of the BLN Emergency Plan. The first sentence states that elected local officials are responsible for off-site radiological emergency response. The fourth sentence indicates that the State agency providing direction and control initiates action to ... provide guidance and assistance to local governments. This implies that the State is notified first [unless it is a General Emergency (GE)] and then the State involves the local governments. Explain why this is a conservative approach for rapid mobilization and implementation of protective actions. The third paragraph states "... the Station communicates via the Operations Duty Specialist (ODS) with the State (and in the event of an initial General Emergency classification, with the affected counties)..." It is not clear whether the ODS ever communicates with the counties during a non-GE. Clarify the notification process(es) to the State and counties detailing how effective and timely implementation of protective actions is achieved if the licensee is not communicating directly with the local governments.

B. Section II.E of the BLN Emergency Plan outlines communication procedures, mobilization, message content, and follow-up messages but does not address the administrative or physical means for notifying local, State and Federal officials and agencies. Provide a list of officials by title and agency located in the Emergency Planning Zones (EPZs). Provide the local governments and position titles that will be notified by BLN when a radiological emergency occurs at the plant. Describe the procedure for and physical means for making notifications to offsite agencies.

C. In Section II.E of the BLN Emergency Plan, include potentially affected areas and populations as listed in NUREG-0654, FEMA-REP-1; Evaluation Criterion E.3. Describe the content of the applicable messages and/or notification forms.

D. Section II.E.4, "Follow-up Messages to Off-site Authorities," of the BLN Emergency Plan states that there are dedicated communications for continuous communication allowing regular updates. Explain where the communication system is located and who provides the communication. Provide information identifying the communicators, where they will be located during an emergency and how they will obtain the necessary information for the follow-up messages.

E. Section II.E.7, "Written Messages to the Public," of the BLN Emergency Plan states that TVA will assist with the development of the messages to the public. Identify the person who will assist and in what Emergency Plan Implementing Procedure (EPIP) the procedure for providing assistance will be located. Provide details on how the supporting information for written messages to the public will be provided. Discuss what position in the Emergency Response Organization (ERO) will provide this assistance and summarize the information from the EPIP on how this assistance will be provided.

**BLN RAI ID: 1144 (A), 1350 (B), 1351 (C)**

**BLN RESPONSE:**

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A. The emergency notification protocol currently implemented by TVA facilities is as stated in the COL Application Emergency Plan and summarized in the RAI. Following recognition and classification of an emergency condition constituting a Notification of Unusual Event, Alert, or Site Area Emergency, the Site Emergency Director (SED) notifies the Operations Duty Specialist (ODS). The ODS records the required information on the accepted notification form and subsequently notifies the State of Alabama. The State of Alabama subsequently notifies affected county officials. For these events, the ODS does not communicate with the affected local authorities. Following recognition and classification of an emergency condition constituting a General Emergency, the SED notifies the ODS. The ODS notifies both the affected local and State authorities. This initial notification includes initial Protective Action Recommendations (PARs), thereby providing for effective and timely implementation of protective actions. This notification protocol has been accepted by affected Federal, State and local authorities and has been proven effective in both emergency exercises and actual emergency events.

Following staffing and activation of the Central Emergency Control Center (CECC) and the State and local Emergency Operations Centers, subsequent notifications regarding emergency classifications and PARs are transmitted directly from the CECC to the affected local and State authorities.

B. Upon notification by the SED of the declaration of a Notification of Unusual Event, Alert, or Site Area Emergency, the ODS provides immediate notification, via commercial telephone service, to the Alabama Emergency Operations Center Communications Center. This center is the 24-hour Warning Point for the Alabama Emergency Management Agency and the Alabama Office of Radiation Control. The Alabama Radiation Control Duty Officer serves as a back-up for these notifications and also would be notified by commercial telephone service. Upon notification by the SED of the declaration of a General Emergency, the ODS also notifies the affected Jackson and DeKalb County agencies. The designated contact points are the local Emergency Management Agencies (during normal working hours) and the county Sheriff's offices (during off-hours and as a back-up to the Emergency Management Agencies), which function as the local warning points. The primary means of communications is commercial telephone service. Subordinate emergency response agencies are notified by the affected State and local officials in accordance with their respective plans. The current protocol for completing notifications from TVA to State and local response agencies is provided in TVA corporate procedures. TVA expects that a similar protocol for the Bellefonte Nuclear Plant would be added to the existing procedures or their successors.

The notifications are made to the affected State and local agencies via commercial telephone systems. The calls may be answered by any individual assigned by the affected agency; therefore, TVA is unable to specify the title of the individuals receiving the notifications.

C. The notification form, which has been accepted by the affected State and local authorities, is included in the notification procedures and completed by the ODS based on information provided by the SED. This form includes Protective Action Recommendations, which are identified by the affected geographical sector designations as provided on the Plume Exposure Pathway EPZ maps in both the COL Emergency Plan and in the Evacuation Time Estimate Report. Identification of these sectors would also serve to identify the affected areas and populations. Examples of the existing General Emergency notification forms used for TVA's operating nuclear plants are provided as Attachment 13.03-22A. TVA expects that specific information for the Bellefonte Nuclear Plant would be added to the forms in these procedures or their successors.

D & E. Response to be provided at a later date.

This response is PLANT-SPECIFIC.

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**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

Attachment 13.03-22A, Example TVA Notification Forms for General Emergencies

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-23**

**SITE-6:** Communication processes

Basis: 10 CFR 50.47(b)(6), Appendix E.IV.E; 10 CFR 50, Appendix E.IV.E.9.c; 10 CFR 50, Appendix E.IV.E.9.d; NUREG-0654/FEMA-REP-1; Evaluation Criterion F.1.a; Evaluation Criterion F.1.c; Evaluation Criterion F.1.d

SRP ACCEPTANCE CRITERIA: Requirements A and B; Acceptance Criteria 1 and 2

A. Section II.F.3, "Communication System Reliability," of the BLN Emergency Plan states "Communications with BLN field assessment teams are tested annually." Section II.F.1.f, "Description of Communication Links," uses the term "off-site monitoring teams" and NUREG-0654/FEMA-REP-1; Evaluation Criterion F.1 uses the term "radiological monitoring teams". Clarify or define "off-site monitoring teams" and "BLN field assessment teams."

B. Section II.N.2.a, "Communications Drills," states that "TVA (Tennessee Valley Authority) tests communications with Federal emergency response organizations and States within the EPZ (Emergency Planning Zone) quarterly." Explain the departure from the guidance specifying monthly tests in NUREG-0654, Evaluation Criteria N.2.a. Clarify the testing frequency from the licensee to the NRC Headquarters and the appropriate NRC Regional Office Operations Center.

C. Section II.F of the BLN Emergency Plan states that responsibilities of designated personnel for the communication systems can be found in State and local plans and in the emergency plan implementing procedures (EPIPs). Provide a summary of these responsibilities in the BLN Emergency Plan. Provide information on who is designated to use communication systems and what responsibilities they have for using those communication systems.

**BLN RAI ID: 1145 (A), 1354 (B)**

**BLN RESPONSE:**

A. Within the Bellefonte COL Emergency Plan, the terms "off-site monitoring teams" and "field assessment teams" are used interchangeably and are also used consistent with the term "radiological monitoring teams" as used in NUREG-0654/FEMA-REP-1, Evaluation Criterion II.F.1.

B. The first sentence of COL Emergency Plan Section II.N.2.a addresses the monthly communication test with State and local governments within the Plume Exposure Pathway EPZ consistent with guidance provided in the corresponding section of NUREG-0654/FEMA-REP-1. The text of the COL Emergency Plan cited in the RAI is misquoted. This sentence addresses testing of communications with organizations within the Ingestion Exposure Pathway EPZ, including Federal emergency response organizations and States. The quarterly frequency for this activity is consistent with the guidance provided in the corresponding section of NUREG-0654/FEMA-REP-1.

NUREG-0654/FEMA-REP-1 Evaluation Criterion II.N.2.a does not address periodic testing of communications from the licensee to the NRC Headquarters and the appropriate NRC Regional Office Operations Center. These communications systems are tested monthly in accordance with 10 CFR 50, Appendix E, Section IV.E.9.d.

C. Response to be provided at a later date.

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This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**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. The BLN Emergency Plan does not state that the Technical Support Center (TSC) will be the primary communications center during an emergency. Discuss whether the TSC is the primary communications center during an emergency.

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. Address whether there are security barriers between the TSC and the Main Control Rooms (MCRs) and provide additional information regarding any such security barriers.

D. Appendix 10, "Technical Support Center Description," discusses the availability of portable radiation monitors to staff in the TSC. The presence of trip levels is not discussed, but a statement is made that system allows for detailed analysis of plant conditions. Section II.I.9, "Measuring Radioiodine Concentrations," states that field teams have portable air samplers capable of detecting radioiodine at the specified levels. Clarify whether they are also used in the TSC. Clarify whether the TSC has continuous monitoring with trip levels to notify staff of inhabitable conditions and clarify whether the TSC will have portable air samplers for detecting radioiodine.

E. Section II.H.1, "On-Site Emergency Response Facilities," of the BLN Emergency Plan states that in the event that all off-site and on-site AC power is unavailable, the TSC could be evacuated and the TSC management function transferred to a location unaffected by the radiation release. Discuss the potential locations to be considered if the TSC must be moved.

F. Section II.H.1, "On-site Emergency Response Facilities," states that the display capability in the TSC includes a workstation that, at a minimum, is capable of displaying the parameters that are required of a Safety Parameter Display System (SPDS). The Bellefonte Emergency Plan states that the SPDS function is described in Section 18.4, "Functional Requirements Analysis and Allocation," of the Tier 2 Material in AP1000 DCD, Revision 16, but it is actually described in 18.8.2, "Safety Parameter Display System (SPDS)," of the AP1000 DCD, Revision 16. Discuss the appropriateness of the reference to Section 18.4 in this section of the BLN Emergency Plan.

G. The introductory information contained in Section II.H, "Emergency Facilities and Equipment," of the BLN Emergency Plan states that the Control Rooms, OSCs and TSC were designed to meet the intent of the guidance in NUREG-0737, Supplement 1, "Clarification of TMI Action Plan Requirements." Provide a summary of the information in the BLN Emergency Plan that describes how the plan meets the intent of the guidance in NUREG-0737, Supplement 1.

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H. Section II.H., "Emergency Facilities and Equipment," of the BLN Emergency Plan states that the Main Control Rooms and OSCs were designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities." Provide a summary of the information in the BLN Emergency Plan to describe how the plan meets the intent of the guidance in NUREG-0696.

I. Section II.H., "Emergency Facilities and Equipment," of the BLN Emergency Plan states that the TSC was designed to meet the intent of the guidance in NUREG-0696, "Functional Criteria for Emergency Response Facilities." Provide a summary of the information in the BLN Emergency Plan to describe how it meets the intent of the guidance in NUREG-0696. For example, explain how the following items from NUREG-0696 related to the TSC are addressed in the BLN Emergency Plan: (a) Address training of TSC staff to follow procedures; (b) Address management plans, facility staffing and task assignments of TSC personnel; (c) Provide a detail staffing plan for the TSC to address the overall management of licensee resources and the continuous evaluation and coordination of licensee activities during and after an accident; (d) Provide the TSC staff assignments to address that TSC management of licensee onsite and offsite radiological monitoring, to perform radiological evaluations, and to interface with offsite officials. Address whether the personnel assigned to the TSC varies according to the emergency class; (e) Address procedures for and training of personnel to use the data systems and instrumentation and include limitations of instrumentation; (f) Address how TSC staff maintain proficiency (participation in drills); and (g) Address whether there are means for facsimile transmission capability between the CECC, TSC and NRC Operations Center.

J. In accordance with SRP Section 15.0.3 (Acceptance Criterion 3) the staff reviews whether the total calculated radiological consequences in the TSC for the postulated fission product releases fall within the exposure acceptance criteria specified in GDC 19 of 5 rem TEDE (0.05 Sv) for the duration of the design basis accidents (DBAs). Provide the radiological consequence analyses for the Bellefonte TSC for the postulated DBAs. The DBAs are listed and evaluated in Chapter 15 of the certified AP1000 DCD, Revision 15 and in the AP1000 Design Certification Amendment Application (AP1000 DCD, Revision 16). The radiological analyses should include, but are not limited to, the following parameters:

1. TSC ventilation air inlet and recirculation flow rates
2. HEPA filter and charcoal adsorber fission product removal efficiencies
3. TSC unfiltered air in-leakage rate
4. Atmospheric dispersion factors ( $\chi/Q$  values) at TSC air intake
5. TSC occupancy factors
6. TSC free air volume
7. Occupant breathing rate
8. Description of the ventilation design

K. Explain how the following items from NUREG-0696 that are related to the CECC are addressed in the BLN Emergency Plan: (a) Address training of CECC staff to follow procedures; (b) Address management plans, facility staffing and task assignments of CECC personnel; (c) Provide a detail staffing plan for the CECC to address the overall management of licensee resources and the continuous evaluation and coordination of licensee activities during and after an accident; (d) Provide the CECC staff assignments to address that CECC management of licensee onsite and offsite radiological monitoring, to perform radiological evaluations, and to interface with offsite officials. Address if the personnel assigned to the CECC varies according to the emergency class; (e) Address procedures for and training of personnel to use the data systems and instrumentation and include limitations of instrumentation; (f) Address how CECC staff maintain proficiency (participation in drills); (g) Address the size of the working space in the

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CECC; and (h) Address whether there are means for facsimile transmission capability between the CECC, TSC and NRC Operations Center.

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. Guidance provided in Section 2.2, "Location," in NUREG-0696 states that the walking time from the TSC to the control room to the control room should not exceed 2 minutes. In addition, the 2-minute travel time does not include time required to put on any radiological protective gear, but it does include the time required to clear any security checkpoints. Section H., "Emergency Facilities and Equipment," of the BLN Emergency Plan states that a single TSC for both units will be located in the basement of the Maintenance Support Building. Appendix 10, "Technical Support Center Description," states that the TSC may not be within a two-minute walk of either units' control room. In addition, Appendix 10 states that 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. Provide a figure/drawing that shows the proximity of the TSC with respect to the control room. Discuss the time it would take to walk from the TSC to the control room.

O. The introductory paragraph in Appendix 9, "Justification for CECC," of the BLN Emergency Plan," states that since the early 1980's, TVA has used a centralized concept for providing the Emergency Operations Facility (EOF) function. Consistent with this approach, the BLN Emergency Plan relies on the use of the Central Emergency Control Center (CECC) as the EOF for the Bellefonte Nuclear Plant. On March 19, 1981, the NRC approved the CECC concept with certain provisions. In a letter to Mr. H.G. Parris, Manager of Power, dated March 19, 1981, the NRC informed TVA of the need to provide certain details regarding the near-site EOF for each site. The details related to the EOF trailer(s) and the need for TVA to submit specific elements according to Action Plan III.A.1.2. (relates to NUREG-0737, "Clarification of TMI Action Plan Requirements," action items). Specifically, (1) The EOF trailer(s) should be able to be positioned and operational within two hours of being notified that the NRC Regional Director (now Regional Administrator) and site team are departing for a site. (2) There should be a discussion of the location(s) where the trailer(s) will be stored and where the trailer(s) will be positioned and operational. In the latter case, discuss the relationship of the location to projected release dispersion patterns. (3) There should be a description of the data availability and the communication capability in the EOF trailer(s). (4) There should be adequate space available (on the order of 1500 square feet) to accommodate the NRC site team and a FEMA liaison individual with an appropriate TVA complement. The space should be configured to provide for: a work area for EOF personnel; EOF data system equipment needed to receive and transmit data from/to other locations; performing repair, maintenance, and service equipment, displays and instrumentation; ready access to communications equipment by all EOF personnel who need communications capabilities to perform their functions; and ready access to functional displays of EOF data and to displays of plant records and historical data. Discuss the justification provided in Appendix 9 with respect to the provisions related to the CECC concept contained in the NRC letter dated March 19, 1981.

P. Section II.H.6.a, "Access to Data from Monitoring Systems," Section II.H.8, "Meteorological Instrumentation and Procedures," and Appendix 2, "Radiological Assessment and Monitoring," of the BLN Emergency Plan briefly discuss meteorological data acquisition and evaluation. There is a more

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detailed discussion in BLN FSAR Section 2.3.3, "Onsite Meteorological Measurement Programs." Please describe the distribution of meteorological data to the emergency response facilities, to the NRC and to the States. In addition, discuss whether there is an on-site backup meteorological data system to provide wind speed and direction when data are not available from the primary system. Also, describe how the National Weather Services is to be contacted, what data are to be requested, and how the data should be interpreted to get information that is representative of the BLN site. In sum: provide information on the acquisition and distribution of meteorological information representative of the BLN site to emergency response facilities, the NRC, and the states and a discussion on obtaining and evaluating metrological information in the event data from the primary meteorological data system is unavailable.

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. BLN DEP18.8-1 states that the Operational Support Center (OSC) location will be described in the applicant's emergency plan. In section H.1, "On-site Emergency Response Facilities," of the BLN Emergency Plan, it states that the OSCs are located in the space designated in the AP 1000 DCD for the TSC. Section 1.2.5, "Annex Building," of the AP1000 DCD refers to the Annex Building as being as described in Figures 1.2-17 through 1.2-20. However, these figures are blank in Revision 16. Provide figure/drawing(s) of the location of the OSC in the Annex Building(s). This figure/drawing, or a similar one, should also be included in the BLN Emergency Plan.

S. Discuss the intended role of the TSC with regard to its location and mitigation strategies for events that could potentially result in the loss of large areas of the plant due to explosion or fire.

**BLN RAI ID: 1360 (C), 1362 (E), 1363 (F), 1376 (S)**

**BLN RESPONSE:**

A & B. Response to be provided at a later date.

C. The Technical Support Center (TSC) is located within the Protected Area for the Bellefonte site. Specific information concerning the types and nature of security barriers is addressed in the Security Plan, but access to the Main Control Rooms (MCRs) is required to be controlled and access to the TSC is

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controlled such that unauthorized access is denied. No other access controls between the MCRs and TSC have been identified at this time.

D. Response to be provided at a later date.

E. The most likely location to which TSC management functions would be transferred is the Main Control Room of the affected unit. Although other alternatives may be considered in the future, TVA does not believe that such a relocation should be specified in the COL Application Emergency Plan in light of the events of September 11, 2001 and subsequent industry initiatives related to response to external threats.

F. Section II.H.1, "On-site Emergency Response Facilities," incorrectly cites a reference to Section 18.4 of Tier 2 in Revision 16 of the AP1000 DCD. The COL Application Emergency Plan will be corrected to reference Subsection 18.8.2 of the DCD in a future COLA revision.

G through R. Response to be provided at a later date.

S. TVA recognizes that the issue presented in this RAI is the subject of pending rulemaking and will be addressed in accordance with the final regulations once the rule has been promulgated.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Section II.H.1 will be revised from:

The SPDS function is described in Subsection 18.4 of the DCD.

To read:

The SPDS function is described in Subsection 18.8.2 of the DCD.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**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. Address the time necessary to warn people outside the Protected Area. Provide a discussion on the time it will take to notify personnel and visitors outside the protected area but within the owner controlled area after identification of an emergency.

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.

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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: 1149 (A)**

**BLN RESPONSE:**

A. Personnel and visitors outside the protected area but within the owner controlled area are notified of an emergency through the use of an onsite siren system, public address systems within buildings and security sweeps conducted by security personnel. Based on experience at operating nuclear power plants, TVA anticipates that the necessary security sweeps can be completed within one hour of the decision to evacuate non-essential personnel from the site.

B through E. Response to be provided at a later date.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**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. Subsection O.1.a, "Off-site Emergency Response Training," of Section II.O, "Radiological Emergency Response Training", in the BLN Emergency Plan states that Tennessee Valley Authority (TVA) provides or supports training for affected hospital, ambulance/rescue personnel. Section II.N, "Exercises and Drills," of the BLN Emergency Plan state periodic drills, exercises, and material support are provided consistent with agreements to be developed with medical support providers. Provide information on when the agreements will be finalized between TVA and the medical support providers.

B. Appendix 6, "Emergency Equipment and Supplies" (pages A6-1/2), of the BLN Emergency Plan provides a brief description of first aid supplies/equipment. Provide a complete list of first aid supplies available for emergency response.

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: 1152**

**BLN RESPONSE:**

A. Appendix 7 will be revised in a future revision of the COLA to indicate that these Letters of Agreement will be available and incorporated into the BLN Emergency Plan prior to receipt of nuclear fuel at the site.

B. TVA provides first aid equipment and supplies that are consistent with the requirements of OSHA regulations concerning medical services and first aid provided in 29 CFR 1910.151A (note that TVA is not regulated by OSHA). These regulations do not require specific first-aid kit equipment and supplies. As suggested by industry standards, TVA would consider the following minimum inventory of supplies. The actual initial inventory would be determined based on the applicable industry guidance and TVA's experience in nuclear plant operations. This initial inventory would be revised, as needed, based on TVA's operating experience in responding to emergency events, drills, and exercises.

Item	Minimum Quantity
Absorbent compress, 32 sq. in. (81.3 sq. cm.) with no side smaller than 4 in. (10 cm)	1
Adhesive bandages, 1 in. x 3 in. (2.5 cm x 7.5 cm)	16
Adhesive tape, 5 yd. (457.2 cm) total	1
Antiseptic, 0.5g (0.14 fl oz.) applications	10

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Burn treatment, 0.5 g (0.14 fl. oz.) applications	6
Medical exam gloves	2 pair
Sterile pads, 3 in. x 3 in. (7.5 x 7.5 cm)	4
Triangular bandage, 40 in. x 40 in. x 56 in. (101 cm x 101 cm x 142 cm)	1
Bandage compress – 2 in. x 2 in.	4
3 in. x 3 in.	2
4 in. x 4 in.	1
Eye covering with means of attachment	1
Eye wash – 1 fl. oz. (30 ml)	1
Cold pack – 4 in. x 5 in	1
Roller bandage: 2 in. (5 cm)	2
4 in. (10 cm)	1

In addition to the list above, Appendix 6 notes that stretchers and splints would also be provided.

C. The locations of first aid stations are not currently known. TVA establishes 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 a 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. 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. Likely locations include the Administration Building or Maintenance Support Building, either of which would also provide a location for stabilization and treatment of more seriously injured or ill individuals while awaiting transport to an off-site medical facility.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

COLA Part 5, Bellefonte Nuclear Plant Units 3 & 4 COL Application Emergency Plan Appendix 7 will be revised to include the following information:

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A Letter of Agreement with each medical support provider will be included in this Appendix prior to receipt of nuclear fuel at the site.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-30**

**SITE-13: Recovery and reentry actions**

Basis: 10 CFR 50.47(b)(13); NUREG-0654/FEMA-REP-1; Evaluation Criterion M.1; Evaluation Criterion M.2; Evaluation Criterion M.3; Evaluation Criterion M.4

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 1

A. In Section II.M, "Recovery and Re-Entry" (pages II-58/60), of the BLN Emergency Plan, identify the individual or organization responsible for recovery plans and procedures.

B. In Section II.M of the BLN Emergency Plan, provide the position/title and authority and responsibilities for the facility recovery organization.

C. In Section II.M of the BLN Emergency Plan, address the means for informing members of the onsite response organizations that a recovery operation has been initiated. The BLN Emergency Plan does state that the Central Emergency Control Center (CECC) Director will notify the Nuclear Regulatory Commission (NRC) Operations Center and the state and local Emergency Operation Center (EOC). Discuss the means for this notification; provide information regarding the notification of emergency response personnel onsite and emergency response organizations offsite that the emergency has been terminated and that a recovery organization has been implemented.

D. Section II.M.4, "Updating Total Population Exposure During Recovery Operations" (page II-60), and Appendix 2, "Radiological Assessment and Monitoring" (pages A2-1/8) of the BLN Emergency Plan, states that the Dose Assessment Team will determine population doses using exposure from ground contamination, inhalation of re-suspended radioactivity and ingestion of radioactivity in vegetables and milk. The results of this activity will be provided as recommendations for evacuation sector clearance and reentry. Provide information on who is responsible for communicating recommendations on evacuation sector clearance and reentry and who they will communicate with at the state and local level.

**BLN RAI ID: 1153 (A), 1393 (B), 1394 (C), 1395 (D)**

**BLN RESPONSE:**

A. Evaluation Criteria II.M.1 of NUREG-0654, Rev. 1, states, "Each organization, as appropriate, shall develop general plans and procedures reentry and recovery and describe the means by which decisions to relax protective measures (e.g., allow reentry into evacuated areas) are reached. This process should consider both existing and potential conditions."

General plans and procedures for reentry and recovery are provided in Section II.M of the Bellefonte Nuclear Plant, Units 3 & 4 COL Application Emergency Plan. To clarify information provided in Subsection II.M.2, the decision to enter the recovery phase is made by the Site Emergency Director (SED) with concurrence from the CECC Director and the Chief Nuclear Officer and Executive Vice President. Following the decision to enter into the recovery phase, the Chief Nuclear Officer and Executive Vice President or his designee direct the overall recovery effort.

As discussed in the Emergency Plan, the State of Alabama has the authority for actions taken offsite; however, TVA serves as an important source of technical and analytical assistance for the State in offsite monitoring and sampling needed to determine the extent and methods of offsite recovery. The Chief

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Nuclear Officer and Executive Vice President (or his designee) serves as the State's contact for coordination of TVA's efforts in offsite monitoring, sampling and recovery.

B. Key positions in the recovery organization as described in Subsection II.M.2 of the Emergency Plan include, the CECC Director, SED, and "Executive, Nuclear Operations." As noted in the response above, the Chief Nuclear Officer and Executive Vice President (or his designee) directs the overall recovery effort for TVA. The organizational structure of TVA's Recovery Organization for the operating nuclear plants at Brown's Ferry, Sequoyah, and Watts Bar is discussed in the current TVA CECC EPIP for Termination and Recovery. A copy of the current version of this procedure is provided as Attachment 13.03-30A for information purposes as it does not yet specifically address the Bellefonte Nuclear Plant. This would be same organization used for the Bellefonte Nuclear Plan.

C. Notification methods and procedures are discussed in Section II.E of the COL Application Emergency Plan. Emergency communication systems are discussed in Section II.F. As discussed throughout these sections, emergency information, including termination and entry into a recovery mode, have been established. TVA does not anticipate implementing alternative means to notify the onsite and offsite emergency response organizations that an emergency has been terminated and the recovery organization instituted. Details regarding implementation of the recovery organization will be addressed in an Emergency Plan Implementing Procedure. Currently, TVA uses the attached CECC EPIP (Attachment 13.03-30A).

D. The CECC Director is responsible for communication of recommendations on evacuation sector clearance and reentry to cognizant State and local agencies. State officials are present in the CECC and establish and maintain contact with cognizant county officials at the Jackson and DeKalb County Emergency Operations Centers.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

Attachment 13.03-30A, Current TVA CECC EPIP for Termination and Recovery

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-31**

**SITE-14: Drill and exercise evaluation and critiques**

Basis: 10 CFR 50(b)(14); Appendix E.IV.F.2.g; NUREG-0654/FEMA-REP-1; Evaluation Criterion N.4; Evaluation Criterion N.5

SRP ACCEPTANCE CRITERIA: Requirements A and B; Acceptance Criteria 1 and 2

A. Section II.N.4, "Exercise and Drill Evaluation," of the BLN Emergency Plan states that qualified instructors/evaluators supervise and evaluate drills and exercises. The second paragraph states that "...areas to be evaluated by the facilitators are defined in...critique sheets." The third paragraph states that selected TVA, Nuclear Regulatory Commission (NRC), state, local and other participants and observers/evaluators attend the critique. However, it appears that only facilitators fill out and submit critique sheets. Provide clarification of instructors/evaluator and facilitator roles.

B. Section N.1.b. of the BLN Emergency Plan states that all major elements of the plan will be tested within a 6-year period. The guidance provided in Evaluation Criterion N.1.b of NUREG-0654 specifies that all major elements of the plan are to be tested within a 5-year period. Discuss the difference in the time periods for testing all major elements of the BLN Emergency Plan.

**BLN RAI ID: 1154 (A), 1396 (B)**

**BLN RESPONSE:**

A. The first paragraph of Bellefonte COL Emergency Plan Section II.N.4 discusses the roles of instructors/evaluators in the drill and exercise evaluation process. Following this paragraph, the second paragraph: a) makes it clear that TVA provides an opportunity for Federal, State, and local observers/evaluators to participate in exercise critiques; and b) outlines the use of pre-printed critique sheets by "facilitators." As used in this paragraph, the term "facilitators" includes any observers/evaluators to whom TVA provides pre-printed critique sheets for use in evaluating exercise performance. The third paragraph of Section II.N.4 discusses this critique process.

B. 10 CFR 50.47, Emergency Plans, and a revision to 10 CFR 50 Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities, became effective on November 3, 1980 (45 FR 55402). NUREG-0654/FEMA-REP-1 (Rev. 1), Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, was published in November 1980. Evaluation Criterion N.1.b of NUREG-0654/FEMA-REP-1 referred to a five-year period for testing major elements of plans and preparedness organizations.

The October 1981 Regulatory Guide 1.101 (Rev 2), Emergency Planning and Preparedness for Nuclear Power Reactors, endorsed NUREG-0654/FEMA-REP-1 (Rev. 1), indicating it provided acceptable means of meeting the regulation. On September 28, 1983, 44 CFR 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," was published in the Federal Register (48 FR 44332). This rule changed the exercise frequency for State and local governments from an annual to a biennial requirement [see 44 CFR 350.9(c)(1)-(4)]. This rule became effective October 28, 1983.

On July 6, 1984, a corresponding revision was made to 10 CFR Part 50, Appendix E, Section IV.F relaxing the frequency of participation by state and local governments in emergency preparedness exercises from annually to biennially. This rule became effective on August 6, 1984. FEMA Guidance

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Memorandum PR-1, "Policy on NUREG-0654/FEMA-REP-1 and 44 CFR 350 Periodic Requirements," (10/1/1985) N.1.b Evaluation Criterion, established a six-year period in-place of five-year period for testing major elements of plans and preparedness organizations.

The November 1987 NUREG-0654/FEMA-REP-1 (Rev. 1), Supplement 1, "Criteria for Utility Offsite Planning and Preparedness," which provided guidance for the development, review, and evaluation of utility offsite radiological emergency response planning and preparedness for those situations in which State and/or local governments decline to participate in emergency planning, states in part, in Evaluation Criterion N.1.b, that "[t]he scenario shall be varied from exercise to exercise such that all major elements of the plans and preparedness organizations are tested within a six-year period." NRC Administrative Letter 94-16, Revision of NRC Core Inspection Program for Annual Emergency Preparedness Exercise, dated 11/30/1994, stated that NRC conducts inspections using Inspection Procedure (IP) 82302 "Review of Exercise Objectives and Scenarios for Power Reactors" to review exercise objectives and scenarios (March 18, 1994 and revised June 24, 1998). IP 82302-03.02.b refers to a six-year objective demonstration cycle.

Thus, while the 1980 NUREG-0654/FEMA-REP-1 (Rev. 1) may have referenced a five-year period for testing major elements of the plans and preparedness organizations based on annual integrated exercises, the Bellefonte COL Emergency Plan proposes a six-year period, as outlined in subsequent regulatory and guidance changes, to correspond to biennial exercise requirements.

This response is PLANT-SPECIFIC

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**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)

B. NUREG-0654/FEMA-REP-1; Criterion P.9, states that the independent audit must be conducted at least every 12 months. Section II.P.9 states that the frequency of the periodic audits is based on an assessment of performance as compared to performance indicators, but all elements of the emergency

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preparedness (EP) program must be reviewed at least once every 24 months. Discuss the performance indicators that will be used to extend the periodic audits to 24 months, provide an ITAAC to track their development, or add the assessment of performance to the list of planned EIPs.

**BLN RAI ID: 1156 (A), 1398 (B)**

**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 (EIPs). 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. With regard to the topics discussed in the RAI, TVA would expect these subjects to be addressed as listed in the following table:

<b>Procedure Subject (as provided in RAI)</b>	<b>Related TVA Procedural Provisions Topical Area</b>
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.

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Procedure Subject (as provided in RAI)	Related TVA Procedural Provisions Topical Area
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 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.

B. The performance indicators to be used to extend the periodic audits to 24 months are expected to be consistent with those currently used to assess emergency preparedness program performance, which include first tier indicators, as provided in NEI 99-02, and second tier indicators, which are developed by TVA Emergency Preparedness. The first tier indicators currently include: 1) Drill/Exercise Performance; 2) Emergency Organization Drill Participation; and 3) Alert and Notification System Reliability. The second tier indicators currently include: 1) Emergency Preparedness NRC Findings; 2) Emergency Center Activation; 3) ERO Pager Tests; 4) Depth of Emergency Response (i.e., numbers of qualified response personnel); 5) Hospital and Ambulance Training; 6) State and Local Emergency Training; 7) FEMA Exercise Findings; 8) CECC Systems Availability; 9) Individual Siren Outage; 10) Siren System Reliability; and 11) Key ERO Member Changes.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

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**NRC RAI NUMBER: 13.03-34**

**SITE-17: Plume Exposure EPZ**

Basis: 10 CFR 50.33(g), 10 CFR 52.77 and 10 CFR 50.47(c)

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 10

Section C.2, "Emergency Planning Zones," in Part 5, "Emergency Plan," describes plume exposure pathway and ingestion pathway emergency planning zones (EPZs). The plume exposure pathway EPZ consists of an area about 10 miles in radius around the site. Figure I-1, "Plume Exposure Pathway Emergency Planning Zone," provides an illustration of the plume exposure pathway EPZ. The plume exposure pathway EPZ is also described to be the area where the principal sources of incident-related radiation exposures are likely to be whole body gamma radiation exposures and inhalation exposures from the passing radioactive plume. Discuss why the plume exposure pathway description does not include whole body external exposure to gamma radiation from deposited material as specified on page 9 of NUREG-0396/EPA 520/1-78-016, "Planning Basis for the Development of State and local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Reactors."

**BLN RAI ID: 1157**

**BLN RESPONSE:**

The Plume Exposure Pathway EPZ as used in the BLN Emergency Plan includes whole body external exposure to gamma radiation from deposited material. Plume Exposure Pathway EPZ is defined on page vii and is included below:

Plume Exposure Pathway EPZ – An area delineated by an approximate ten-mile radius circle around the station. The principal exposure sources from this pathway are: (a) whole body external exposure to gamma radiation from the plume and from deposited materials and (b) inhalation exposure from the passing radioactive plume. The duration of principal potential exposures could range in length from hours to days. (NUREG-0654, Glossary).

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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TVA letter dated September 8, 2008  
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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-35**

**SITE-18: Plume Exposure EPZ**

Basis: 10 CFR 50.33(g), 10 CFR 52.77 and 10 CFR 50.47(c)

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criterion 10

Section C.2, "Emergency Planning Zones," in Part 5, "Emergency Plan," describes plume exposure pathway and ingestion pathway emergency planning zones (EPZs). Discuss whether the exact sizes and configurations of the EPZs surrounding the plant were determined in relation to the local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.

**BLN RAI ID: 1158**

**BLN RESPONSE:**

The emergency planning zones were developed in accordance with 10 CFR 50.33(g). Specifically, the exact size and configurations were developed in cooperation with State and county agencies responsible for emergency planning considering local emergency response needs and capabilities. Factors considered in determining the exact sizes and configurations of the EPZs included demography, topography, land characteristics, access routes, and jurisdictional boundaries. State officials and local officials in Jackson and DeKalb Counties agreed with the EPZs surrounding the plant as reflected by their individual signed certifications provided in Appendix 7, Certification Letters, of the COL Emergency Plan.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-36**

**SITE-19: Emergency Plan**

10 CFR 50.47 and Appendix E to 10 CFR Part 50, NUREG-0654 Evaluation Criterion P.7

SRP ACCEPTANCE CRITERIA: Requirement B; Acceptance Criteria 1 and 2

A. Discuss the purpose associated with including statements in the BLN Emergency Plan that various NUREG-0654 evaluation criteria do not apply to the licensee, but only apply to state and local plans. Discuss how the statements relate to the licensee's response to an emergency.

B. Discuss the purpose of adding the words "Appendix 8 of this plan provides a cross-reference to these provisions in State and local plans, as applicable." to various sections of the BLN Emergency Plan that are intended to describe the licensee's response to a radiological emergency.

C. The second page of Part 5, Emergency Planning," of the BLN COL Application is titled, "Explanatory notes regarding the Emergency Plan and Supplemental Information." Appendix 4, "Evacuation Time Estimate," is included as part of the BLN Emergency Plan, while the "Evacuation Time Estimate Report," is included as Supplemental Information. The first paragraph of Appendix 4 states that the "Bellefonte ETE report, published separately, describes the analyses undertaken and the results obtained by a study to develop Evacuation Time Estimates for the proposed Bellefonte Nuclear Plant .... " Section IV, "Content of Emergency Plans," of Appendix E to 10 CFR Part 50 requires that the evacuation time estimate analysis be part of the licensee's emergency plan and therefore subject to the requirements of 10 CFR 50.54(q). Will the "Evacuation Time Estimate Report," be part of the BLN Emergency Plan?

**BLN RAI ID: 1159 (A), 1399 (B), 1400 (C)**

**BLN RESPONSE:**

A. The purposes of including the referenced statements in the COL Application Emergency Plan are to: 1) clarify the applicability of the corresponding NUREG-0654/FEMA-REP-1 evaluation criterion to the individual emergency plans (applicant, State, or local); 2) maintain clear correlation between NUREG-0654/FEMA-REP-1 and the corresponding sections of the applicant's COL Application Emergency Plan; and 3) facilitate review of the COL Application Emergency Plan by the affected reviewers. These statements have no effect on the licensee's response to an emergency.

B. The purpose of adding the referenced words to various sections of the COL Application Emergency Plan is to provide the reviewer a clear guide to the locations of the corresponding content provided in the referenced State and local emergency plans. These statements have no effect on the licensee's response to an emergency.

C. Appendix E to 10 CFR Part 50 requires only that the evacuation time estimate analysis be provided as part of the licensee's application, not as a part of the emergency plan. The Evacuation Time Estimate Report is for use by the State and Local emergency planners and is not intended to be part of the COL Application Emergency Plan.

This response is PLANT-SPECIFIC.

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**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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TVA letter dated September 8, 2008  
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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-37**

**SITE-20: Evaluation Against the SRP**

Basis: 10 CFR 52.79(a)(41) and 10 CFR 50.34(h)

SRP ACCEPTANCE CRITERIA: Requirement A; Acceptance Criteria 1 and 11

Table 1.9-202, "Conformance with SRP Acceptance Criteria," in Part 2 of the COL Application states that the Section 13.3, "Emergency Planning," is acceptable from a design certification perspective. Identify all applicable differences between the BLN Emergency Plan and Chapter 13.3, "Emergency Planning," of NUREG-0800, Standard Review Plan," dated March 2007. Where differences exist, discuss how the proposed alternative provides an acceptable method of complying with applicable regulations, or portions of the regulations.

**BLN RAI ID: 1160**

**BLN RESPONSE:**

FSAR Table 1.9-202, Item 13.3, documents conformance to SRP, Rev. 3, 03/2007. Notes (d) and (e) address AP1000 conformance to design aspects of SRP 13.3. Specifically, as indicated in WCAP-15799, SRP 13.3 is not applicable to the AP1000 design. The term "Acceptable" under "FSAR Position" in Table 1.9-202 indicates acceptable BLN conformance with the plant or site-specific aspects of SRP 13.3, Rev. 3, 03/2007, as indicated by Note (f). There are no exceptions to the SRP Acceptance Criteria.

This response is PLANT-SPECIFIC.

**ASSOCIATED BLN COL APPLICATION REVISIONS:**

No COLA revisions have been identified associated with this response.

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

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**NRC Letter Dated: August 8, 2008**

**NRC Review of Final Safety Analysis Report**

**NRC RAI NUMBER: 13.03-39**

**ITAAC-22: ITAAC**

Regulatory Basis: 10 CFR 52.80(a)

SRP ACCEPTANCE CRITERIA: Requirement E; Acceptance Criterion 23

A. Some EP ITAAC will be completed for Unit 3 before those for Unit 4. To allow closure of the common ITAAC for both units when Unit 3 is constructed (so that the common ITAAC would not need to stay open until Unit 4 is constructed), was the development of separate ITAAC tables for each unit considered?

B. In Table 3.8-1, "Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10 of the COL Application, Acceptance Criterion 6.3 ends with the words "for various radiological conditions." Table 14.3.10-1, "Emergency Planning Generic Inspections, Tests, Analyses, and Acceptance Criteria," of Section 14.3.10, "Emergency Planning Generic Inspections, Tests, Analyses, and Acceptance Criteria," of NUREG-0800, "Standard Review Plan," contains corresponding Acceptance Criteria 9.3 that ends with the words "for various meteorological conditions." Justify the wording difference between Acceptance Criterion 6.3 in the COL Application and corresponding Acceptance Criterion 9.3 in NUREG-0800.

C. Table 3.8-1, "Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10 of the COL Application, each acceptance criterion is prefaced with the phrase "A report exists that confirms ..." The goal of ITAAC Acceptance Criteria is to be objective criteria that can be demonstrated to have been met prior to fuel load. The Acceptance Criteria must be specific and sufficiently objective, in order to clearly identify what the requirements are, and to provide the ability to determine whether they have been met. In RIS 2008-05, "Lessons Learned to Improve Inspections, Tests, Analyses, and Acceptance Criteria Submittal," February 27, 2008, the following guidance is provided in regard to the use of such a phrase:

If applicants use the phrase, "a report exists and concludes that ...," they should consider specifying the scope and the type of report. For example, they should explain whether the scope of the report includes the design, the as-built construction (as reconciled with the design), or any other information.

The use of the phrase "A report exists that confirms ..." in the Acceptance Criteria does not clearly describe how verification is actually conducted to confirm that the acceptance criteria are met. An area that might be appropriate for using a report to confirm that various ITAAC have been met is Planning Standard 8.0, "Exercises and Drills," for which an Exercise Report could serve to verify that various exercise-related ITAAC (e.g., exercise objectives) have been met.

Consistent with RIS 2008-05, discuss the type and scope of the reports cited in ITAAC Table 3.8-1, including how the report will serve to provide accurate and reliable confirmation that the Acceptance Criteria have been met, or consider removing the words "A report exists that confirms" from the Table, to create specific and sufficiently objective Acceptance Criteria and leave open the specific method(s) that the licensee will use to confirm that the ITAAC acceptance criteria have been met.

D. Table 3.8-1, "Inspections, Tests, Analyses, and Acceptance Criteria," in Part 10, "Proposed Combined License Conditions (Including ITAAC," of the COL Application provides four separate acceptance criteria for planning standard 8.0, "Exercises and Drills." Address the following questions pertaining to the full-participation exercise, and the applicable guidance provided in Regulatory Guide (RG) 1.206,

Appendix B, Table C.II.1-B1, "Emergency Planning – Generic Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)."

- D.1 Table C.II.1-B1 acceptance criterion 14.1.3 addresses offsite exercise objectives associated with the full participation exercise. Explain why Table 3.8-1 does not include an acceptance criterion to reflect the offsite exercise objectives associated with the full participation exercise, and how this is consistent with the intent of this generic ITAAC. Either provide the appropriate acceptance criterion, or explain why it is not necessary.
- D.2 Table 2.3-1 acceptance criteria 8.1.2.1 and 8.1.2.2 appear to address Table C.II.1-B1 acceptance criterion 14.1.2. Explain why 8.1.2.2 does not include the word "successfully" in regard to emergency response personnel performing their assigned responsibilities.
- D.3 Table C.II.1-B1 acceptance criterion 14.1.2 includes the bracketed statement that "[t]he COL applicant will identify responsibilities and associated acceptance criteria." Explain why Table 3.8-1 (acceptance criteria 8.1.2.1 and/or 8.1.2.2) does not identify any responsibilities and associated acceptance criteria, in relation to onsite emergency response personnel successfully performing their assigned responsibilities. Either provide the appropriate acceptance criterion, or explain why it is not necessary.
- D.4 Table C.II.1-B1 acceptance criterion 14.1.1 includes the bracketed statement that "[t]he COL applicant will identify exercise objectives and associated acceptance criteria." Table 3.8-1 acceptance criterion 8.1.1.2 states that exercise objectives, including acceptance criteria, address each of the 8 listed emergency planning program elements. However, Table 3.8-1 does not identify (in the acceptance criteria) what the exercise objectives and associated acceptance criteria are (as called for in Table C.II.1-B1) in order to clearly identify what the requirements are, and to provide the ability to determine whether they have been met. For the full participation exercise acceptance criteria in Table 3.8-1, provide specific exercise objectives and associated acceptance criteria, consistent with Table C.II.1-B1. Either provide the appropriate acceptance criterion, or explain why it is not necessary.
- E. EP Program Element 3.2 of Table 3.8.1, "Inspections, Tests, Analyses, and Acceptance Criteria," states that the means exists for communications from the control room, TSC, and EOF to NRC Headquarters and regional office EOCs (including establishment of the Emergency Response Data System (ERDS) between the onsite computer system and the NRC Operations Center. The "Inspection, Tests, and Analysis" for the EP Program Element is a note that states that the ITAAC for these communications systems are addressed in Table 3.1-1, "Inspections, Tests, Analyses, and Acceptance Criteria," of the Tier 1 Material in the AP1000 Design Control Document, Rev.16. However, ITAAC number 2 in Table 3.1-1, "Inspections, Tests, Analyses, and Acceptance Criteria," states that the TSC has voice communication equipment for communication with the control room, EOF, OSC, and NRC. Provide additional details regarding the establishment of communications with the regional NRC EOC and ERDS between the onsite computer and the NRC Operations Center.
- F. Table C.II.1-B1, " Emergency Planning-Generic Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)," in Appendix C.II.1-B, "Development Guidance for Emergency Planning ITAAC," to RG 1.206 contains the generic EP-ITAAC table. The table lists 17 Planning Standards and the accompanying EP Program Elements, Inspection, Tests, Analysis, and Acceptance Criteria. Explain how the COL application EP-ITAAC addresses the following generic ITAAC Planning Standards:
1. Assignment of Responsibility-Organizational Control--10 CFR 50.47(b)(1) An inspection of the implementing procedures or staffing rosters will be performed.
  2. Onsite Emergency Organization--10 CFR 50.47(b)(2) An inspection of the implementing procedures or staffing rosters will be performed.

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3. Emergency Response Support and Resources--10 CFR 50.47(b)(3) Provide letters of agreement or other documentation that demonstrates arrangement have been made for requesting and effectively using assistance resources, arrangements to accommodate local and state staff at the licensee's near site Emergency Operations Facility have been made, and other organizations capable of augmenting the planned response have been identified.
4. Radiological Exposure Control--10 CFR 50.47(b)(11) A test will be performed of the capabilities
5. Medical and Public Health--10 CFR 50.47(b)(12) A test will be performed of the capabilities
6. Recovery an Reentry Planning and Post Accident Operations --10 CFR 50.47(b)(13) A report exists that confirms the Recovery and Reentry and Post Accident Operations plans have been demonstrated.
7. Radiological Emergency Response Training--10 CFR 50.47(b)(15) An inspection will be performed to verify the emergency response training program meets the applicable standards for those who may be called upon to assist in an emergency and that procedures for the conduct and evaluation of the training program exist and records of training offered and conducted exists.
8. Responsibility for Planning Effort: Development, Periodic Reviews, and Distribution of Emergency Plan --10 CFR 50.47(b)(16) An inspection of the Emergency Plan distribution will be performed to insure all agencies identified in the Emergency Plan have been provided a copy of the final, approved plan and any subsequent revisions, changes, supplements, or amendments.
9. Implementing Procedures: 10 CFR Part 50, Appendix E.V. An inspection of the submittal letter will be performed to insure all required implementing procedures are adequately addressed.

Discuss why ITAAC were not developed for the above Planning Standards, or propose an ITAAC.

G. Table C.II.1-B1, " Emergency Planning-Generic Inspection, Test, Analysis, and Acceptance Criteria (EP-ITAAC)," in Appendix C.II.1-B, "Development Guidance for Emergency Planning ITAAC," to RG 1.206 contains the generic EP-ITAAC table. EP Planning Standard 5.0, "Notification Methods and Procedures," states in associated Acceptance Criteria 5.3:

"The means for notifying and providing instructions to the public are demonstrated to meet the design criteria as stated in the emergency plan. (The COL applicant will identify specific capabilities.)

The BLN COL Emergency Plan states in Chapter II.E.6, "Instructions to the Public in the Plume Exposure EPZ," states:

"The Alert Notification System includes an outdoor warning system, measures for notifying special facilities, and notification of the public. This system is designed to meet the acceptance criteria of Section B of Appendix 3, NUREG-0654/FEMA REP-1."

Provide additional information regarding the alert notification system design to meet the guidance provided in Appendix 3 to NUREG-0654/FEMA REP-1, or propose an ITAAC.

**BLN RAI ID: 1162 (A), 1402 (B), 1403 (C), 1404 (D), 1407 (G)**

**BLN RESPONSE:**

A. ITAAC will be included in the operating license issued to each Unit as a license condition to be closed specific to that unit. As such, the EP ITAAC do not need to be unit-specific. Closure documentation for each ITAAC will address the applicability to one or both units.

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B. The error in Table 3.8-1, Acceptance Criterion 6.3 will be corrected to end with the wording “for various meteorological conditions.”

C. The use of the phrase, “a report exists that confirms..” was incorporated into the Acceptance Criteria in Table 3.8-1 for consistency with Acceptance Criteria presented in the AP1000 Design Certification Document. Upon further review, it has been determined that those Acceptance Criteria associated with conducting a drill or exercise should retain this phrase. However, the phrase, “a report exists that confirms...” will be removed from the following Acceptance Criteria in Table 3.8-1:

1.1.1, 1.1.2, 4.1, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2.1, 5.2.2, 6.2.1, 6.3, 6.4, 6.5, 6.7

D.1 Acceptance Criterion 8.1.1.2 in Table 3.8-1 specifically states that “Exercise objectives, including specific acceptance criteria addressed each of the following Emergency Planning (EP) Program Elements...” This Acceptance Criterion is all inclusive because it does not specify “onsite” nor “offsite.”

The applicant recognizes that a full participation exercise must be conducted prior to fuel loading. The applicant also understands that offsite exercise objectives must be met or deficiencies addressed prior to operation above 5% power. Further, regulations (i.e., 10 CFR 52.80) require that ITAAC be “performed” by the licensee. The applicant does not control whether or not offsite exercise objectives have been met and thus cannot be performed by the licensee. Offsite objectives are, therefore, not appropriate for ITAAC. FEMA will evaluate offsite response during the full participation exercise and render their finding with respect to the adequacy of offsite response in support of plant operations. FEMA’s finding will be the determining factor for the NRC to authorize fuel loading and operation above 5% power.

D.2 The term, “successfully,” is a subjective term. Acceptance Criteria 8.1.2.1 and 8.1.2.2 provide objective criteria that can be met.

D.3 The COL Application Emergency Plan provides information regarding the onsite emergency response organization and associated responsibilities in Sections II.B.1 through II.B.7. A clarifying note will be added to Acceptance Criteria 8.1.2.1 and 8.1.2.2.

D.4 In order to determine that future exercise objectives are sufficient for a comprehensive test of the COL Application Emergency Plan, a list of EP Program Elements that must be tested is provided, including developing exercise objectives and specific acceptance criteria in Acceptance Criteria 8.1.1.2. Additionally, other Acceptance Criteria in Table 3.8-1 provide details directly related to specific objectives that must be met. Acceptance Criteria 2.1.1 and 2.2 address specific notification methods and procedures, Acceptance Criteria 3.1.1, 3.1.2, 3.1.3, 3.1.4, and 3.2 address specific emergency communication objectives, and Acceptance Criterion 6.1 speaks directly to accident assessment and classification and radiological assessment and control.

Exercise planning and conduct is a cooperative effort with State and local agencies. Integral to this planning effort is the development of specific exercise objectives. Considering that it will be several years before the full participation exercise required prior to fuel loading is conducted, the development of specific exercise objectives will be undertaken when the full participation exercise planning effort is initiated with the State and local agencies.

E & F. Response to be provided at a later date.

G. Additional information regarding the Alert and Notification System design information is provided in Appendix 3 of the COL Application Emergency Plan. This information addresses guidance provided in Appendix 3 of NUREG-0654.

This response is PLANT-SPECIFIC.

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**ASSOCIATED BLN COL APPLICATION REVISIONS:**

1. COLA Part 10, Table 3.8-1, will be revised to remove the introductory phrase, "A report exists that confirms" from the following Acceptance Criteria: 1.1.1, 1.1.2, 4.1, 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.2.1, 5.2.2, 6.2.1, 6.3, 6.4, 6.5, and 6.7.

2. COLA Part 10, Table 3.8-1, Acceptance Criterion 6.3 will be revised from:

...for various radiological conditions

To read:

...for various meteorological conditions

3. COLA Part 10, Table 3.8-1, Acceptance Criterion 8.1.2.1 and 8.1.2.2 will be revised to include the following note:

(Note 1: Applicant emergency response organization assigned responsibilities are specified in Sections II.B.1 through II.B.7 of the COL Application Emergency Plan.)

**ASSOCIATED ATTACHMENTS/ENCLOSURES:**

None

Attachment 13.03-22A  
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Attachment 13.03-22A  
(4 pages)

Example TVA Notification Forms for General Emergencies

**BROWNS FERRY**

**STATE INITIAL NOTIFICATION FORM FOR GENERAL EMERGENCY**

1.  This is a Drill  This is an Actual Event - Repeat - This is an Actual Event
2. This is \_\_\_\_\_, TVA Operations Duty Specialist at (423) 751-1700 **Browns Ferry** has declared a **GENERAL EMERGENCY** affecting:  Unit 1  Unit 2  Unit 3  Common

3. **EAL Designator(s):** \_\_\_\_\_

4. **Brief Description of the Event:**

\_\_\_\_\_

\_\_\_\_\_

5. **Radiological Conditions:** (Check one under **both** Airborne and Liquid column.)
- |   |   |
|---|---|
| <p><b>Airborne Releases Offsite</b></p> <p><input type="checkbox"/> Minor releases within federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Releases above federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Release information not known<br/>(<sup>1</sup>Tech Specs)</p> | <p><b>Liquid Releases Offsite</b></p> <p><input type="checkbox"/> Minor releases within federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Releases above federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Release information not known<br/>(<sup>1</sup>Tech Specs)</p> |
|---|---|

6. **Event Declared:** Time: \_\_\_\_\_ Date: \_\_\_\_\_

7. **The Meteorological Conditions are:** (Use 91 meter data from the Met Tower)

Wind Direction is FROM: \_\_\_\_\_ degrees Wind Speed: \_\_\_\_\_ m.p.h

8. **Provide Protective Action Recommendation:** (Check either 1, 2 or 3 and mark wind direction)

<input type="checkbox"/> <b>Recommendation 1</b>	R E C	WIND FROM DEGREES  (Mark)	R E C	<input type="checkbox"/> <b>Recommendation 2</b>
<input type="checkbox"/> EVACUATE LISTED SECTORS (2 mile Radius & 10 miles downwind) <input type="checkbox"/> SHELTER all non-listed sectors. <input type="checkbox"/> CONSIDER issuance of Potassium Iodide in accordance with the State Plan.	1		2	<input type="checkbox"/> EVACUATE LISTED SECTORS (2 mile radius & 5 mile downwind) <input type="checkbox"/> SHELTER all other non-listed sectors. <input type="checkbox"/> CONSIDER issuance of Potassium Iodide in accordance with the State Plan.
A-2, B-2, F-2, G-2, <b>E-5, -10, F-5, -10, G-5, -10</b>		4 - 40		A-2, B-2, F-2, G-2, E-5, F-5, G-5
A-2, B-2, F-2, G-2, <b>F-5, -10, G-5, -10, H-10</b>		41 - 73		A-2, B-2, F-2, G-2, F-5, G-5
A-2, B-2, F-2, G-2, <b>G-5, -10, H-10, I-10</b>		74 - 92		A-2, B-2, F-2, G-2, G-5
A-2, B-2, F-2, G-2, <b>A-5, G-5, H-10, I-10, J-10, K-10</b>		93 - 137		A-2, B-2, F-2, G-2, A-5, G-5
A-2, B-2, F-2, G-2, <b>A-5, -10, I-10, J-10, K-10</b>		138 - 203		A-2, B-2, F-2, G-2, A-5
A-2, B-2, F-2, G-2, <b>A-5, -10, B-5, -10,</b>		204 - 282		A-2, B-2, F-2, G-2, A-5, B-5
A-2, B-2, F-2, G-2, <b>B-5, -10, C-10, D-10, E-5, -10</b>		283 - 326		A-2, B-2, F-2, G-2, B-5, E-5
A-2, B-2, F-2, G-2, <b>C-10, D-10, E-5, -10, F-5, -10</b>		327 - 3		A-2, B-2, F-2, G-2, E-5, F-5

**Recommendation 3**

SHELTER all sectors and CONSIDER issuance of Potassium Iodide in accordance with the State Plan.

9. Please repeat the information you have received to ensure accuracy.

10. Go to Section 6.1.3 of this procedure.

**Action: When completed, telecopy this information.**



## WATTS BAR

### STATE INITIAL NOTIFICATION FORM FOR GENERAL EMERGENCY

1.  This is a Drill       This is an Actual Event - Repeat - This is an Actual Event

2. This is \_\_\_\_\_, TVA Operations Duty Specialist at (423) 751-1700 **Watts Bar** has declared a **GENERAL EMERGENCY** affecting: Unit 1

3. **EAL Designator(s):** \_\_\_\_\_

4. **Brief Description of the Event:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

5. **Radiological Conditions:** (Check one under **both** Airborne and Liquid column.)

<p><b><u>Airborne Releases Offsite</u></b></p> <p><input type="checkbox"/> Minor releases within federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Releases above federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Release information not known (<sup>1</sup>Tech Specs)</p>	<p><b><u>Liquid Releases Offsite</u></b></p> <p><input type="checkbox"/> Minor releases within federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Releases above federally approved limits<sup>1</sup></p> <p><input type="checkbox"/> Release information not known (<sup>1</sup>Tech Specs)</p>
--	--

6. **Event Declared:**      Time: \_\_\_\_\_      Date: \_\_\_\_\_

7. **The Meteorological Conditions are:** (Use 46 meter data from the Met Tower)

Wind Direction is FROM: \_\_\_\_\_ degrees      Wind Speed: \_\_\_\_\_ m.p.h

8. **Provide Protective Action Recommendation:** (Check either 1, 2 or 3 and mark wind direction.)

<input type="checkbox"/> <b>Recommendation 1</b>	R E C	WIND FROM DEGREES (Mark)	R E C	<input type="checkbox"/> <b>Recommendation 2</b>
<ul style="list-style-type: none"> <li>▶ EVACUATE LISTED SECTORS (2 mile Radius and 10 miles downwind)</li> <li>▶ SHELTER all other non-listed sectors.</li> <li>▶ CONSIDER issuance of Potassium Iodide in accordance with the State Plan.</li> </ul>	1		2	<ul style="list-style-type: none"> <li>▶ EVACUATE LISTED SECTORS (2 mile radius and 5 mile downwind)</li> <li>▶ SHELTER all other non-listed sectors.</li> <li>▶ CONSIDER issuance of Potassium Iodide in accordance with the State Plan.</li> </ul>
A-1, B-1, C-1, D-1, C-7, -9, D-2, -4, -5, -6, -7, -8, -9		26-68		A-1, B-1, C-1, D-1, C-7, D-2, -4, -5
A-1, B-1, C-1, D-1, A-3, -4, D-2, -3, -4, -5, -6, -7, -8, -9		69-110		A-1, B-1, C-1, D-1, A-3, D-2, -4, -5
A-1, B-1, C-1, D-1, A-2, -3, -4, -5, -6, -7, D-2, -3, -5, -6		111-170		A-1, B-1, C-1, D-1, A-2, -3, D-2, -5
A-1, B-1, C-1, D-1, A-2, -3, -5, -6, -7, B-2, -3, -4, -5, C-2		171-230		A-1, B-1, C-1, D-1, A-2, -3, B-2, -4, C-2
A-1, B-1, C-1, D-1, B-2, -3, -4, -5, C-2, -3		231-270		A-1, B-1, C-1, D-1, B-2, -4, C-2
A-1, B-1, C-1, D-1, B-2, -3, C-2, -3, -4, -5, -6, -11		271-325		A-1, B-1, C-1, D-1, B-2, C-2, -4, -5
A-1, B-1, C-1, D-1, C-2, -4, -5, -6, -7, -8, -9, -10, -11, D-4, -9		326-25		A-1, B-1, C-1, D-1, C-2, -4, -5, -7, -8, D-4

**Recommendation 3**

▶ SHELTER all sectors.      ▶ CONSIDER issuance of Potassium Iodide in accordance with the State Plan.

9. Please repeat the information you have received to ensure accuracy.  
 10. Go to Section 6.1.3 of this procedure.

**Action: When completed, telecopy this information.**

Attachment 13.03-30A  
TVA letter dated September 8, 2008  
RAI Responses

Attachment 13.03-30A,  
(18 pages)

Current TVA CECC EPIP  
for  
Termination and Recovery



CECC-EPIP-16

TERMINATION AND RECOVERY

REVISION LOG

<u>Rev. No.</u>	<u>Date</u>	<u>Revised Pages</u>
<u>0</u>	<u>10/28/03</u>	<u>Change from CECC-EPIP-13 to CECC-EPIP-16 for consistency between sites procedures.</u>
<u>1</u>	<u>4/15/04</u>	<u>Annual review. Revise EPIP number. All pages issued.</u>
<u>2</u>	<u>9/28/04</u>	<u>Revised position titles to reflect TVAN Corporate reorganization.</u>
<u>3</u>	<u>11/8/06</u>	<u>Add reference to BFN Unit 1.</u>
<u>4</u>	<u>03/19/08</u>	<u>Changed some titles and responsibilities to reflect organization changes. Changed TVAN to NPG. Revised Recovery Organization Chart. Annual Review.</u>

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## 1.0 PURPOSE

This procedure provides guidance on termination and recovery from an incident for which onsite and offsite emergency centers were activated by the Site Emergency Director and transition from the Emergency Response Organization to the Recovery organization if necessary.

Termination begins when personnel responsible for the response effort determine that conditions are sufficiently stabilized to begin comparing them to pre-established decisional criteria. The termination decision and subsequent notification that an event no longer constitutes an Operational Emergency establishes the beginning of recovery.

Recovery is defined as those actions taken, after a plant has been brought to a stable or shutdown condition, to return the plant to normal operation. Recovery will begin when the emergency response is declared terminated. The level of recovery operations depends on the severity of the event. The recovery phase may be implemented in a graded approach from one of no recovery actions necessary to a fully implemented course of actions. When implemented, the recovery phase continues until the plant and any affected areas meet predetermined criteria for the resumption of normal operation or use.

Types of activities conducted during the recovery phase may include (but are not limited to):

- Damage assessment
- Environmental consequence assessment
- Long-term protective action determinations
- Plant and/or environmental restoration
- Dissemination of information

## 2.0 SCOPE

This procedure applies to the termination of a REP event which required activation of onsite and offsite emergency centers and actions for reentry and recovery activities required to restore the plant to normal operating condition and to provide assistance to state and local organizations.

## 3.0 RESPONSIBILITIES

**\*3.1** The Chief Nuclear Officer & Executive Vice President, or his designee will direct the overall recovery effort. If expected to be a long-term process, he may establish a recovery organization to be responsible for continuous direction and control of the recovery operation. This organizational structure would be contingent upon the emergency situation and required actions for recovery. Staffing of the CECC may remain in whole or in part as necessary. The LRC is also available to provide additional office space near the site to support the recovery operation.

**3.2** The CECC Director is responsible for coordinating with the Site Emergency Director, NRC, and appropriate offsite agencies in determining when to enter the recovery phase. Once that decision has been made, the CECC Director will notify the Chief Nuclear Officer & Executive Vice President, or his designee.

\*Revision

If the event was associated with an emergency off-site either natural or manmade which impacted the off-site (State and local) emergency response, the NRC regional administrator will inform the affected license when the condition of the off-site emergency preparedness infrastructure can support a safe reactor restart. NRC Administrative Letter 97-03 which provides information for plant restart discussions following natural disasters is provided as Appendix C.

3.3 \* The CECC Public Information Manager (PIM) acts as an interface between TVA and the news media. The PIM assists the Chief Nuclear Officer & Executive Vice President, CECC Director, or their designees with:

- drafting news releases concerning progress of the recovery operation
- coordinating all news releases with TVA management and State and Federal officials as required.
- coordinating all press briefings and interviews concerning the incident.

3.4 Radiological Assessment Manager (RAM) provides radiological support as necessary.

3.5 The Vice President, Nuclear Support will provide required technical support in the following areas:

- Nuclear Assurance
- Licensing
- Emergency Services
- Security
- Nuclear Fuels

\*3.6 The Vice President of Engineering and Technical Services provides support in various engineering disciplines.

3.7 The Manager, Plant Operational Reliability provides support in the area of plant components.

\*3.8 The Manager, Technical Programs Reliability provides support in the following areas:

- Radiation Protection
- Chemistry
- \* • Environmental Monitoring
- \* • Dose Assessment
- \* • Radwaste and Environmental Protection
- \* • Will provide technical support and environs sampling assistance as requested by the State.

#### **4.0 PROCEDURES**

##### **4.1 Termination**

The decision to terminate an incident for which onsite and offsite emergency centers have been activated will be made by the Site Emergency Director after consultation with the plant technical and operations staffs and coordinated with the CECC Director. Proposals for termination of an emergency and entry into recovery will be coordinated with the State and NRC, if appropriate, through the CECC. Termination decisions should be based on site-specific EPIP-16 criteria and broad-based parameters such as:

\*Revision

- Radiation or hazardous material exposure levels within the affected plant or area(s) are stable or decreasing with time.
- The affected plant is in a stable condition, and there is a high probability that it can be maintained in that condition.
- Releases of hazardous material to the environment have ceased or are controlled within permissible regulatory limits, and the potential for an uncontrolled release is low.
- All emergency notifications have been completed.
- The Site Emergency Director and CECC Director in consultation with the NRC and appropriate offsite agencies do not identify a valid reason to continue operating in the emergency response mode.
- Initial recovery activities have been clearly identified and prioritized.
- When applicable, a recovery staffing plan has been developed, approved and can be implemented.

#### **4.2 Recovery Operations**

Recovery planning and implementation will start with assessment of plant, site, and environmental conditions. There are three general areas of recovery operations: accident assessment and investigation, recovery planning and scheduling, and repair and restoration.

##### **4.2.1 Accident Assessment and Investigation**

The following type of activities should be considered for accident assessment and investigation:

- Plant management in coordination with TVA Nuclear Power Group (NPG) Corporate management, should establish an investigation board to determine the root cause of the event and prepare a formal accident report.
- All documents generated during the emergency response and useful to the accident investigation should be collected and organized.
- Plant technical, operations, and maintenance staffs should assess the condition of the plant including structural integrity, equipment status, hazardous material containment/confinement barriers, and safety systems.
- Provide support, when requested, to federal, state, and local government agencies for assistance with offsite dose assessment and related activities.

##### **4.2.2 Recovery Planning and Scheduling**

The following type of activities should be considered for recovery planning and scheduling:

- Notification to persons and agencies involved in the emergency response of the establishment of the Recovery Organization and the name of the person in charge.
- Evaluation of emergency plans to determine if adequate emergency preparedness status can be maintained during degraded plant conditions (e.g., inaccessibility of assembly areas, inoperative emergency/safety instrumentation and equipment, etc.)

\*Revision

- Establishment of specific criteria to be met prior to the resumption of normal operations or facility use.
- Contact with the affected State to coordinate any support required for assessment and recovery of affected offsite areas.
- Preparation of plans for the establishment of safe long-term conditions when the assessment indicates that a plant or affected area cannot be safely returned to normal operation or use.
- Identification of required repair and restoration work based on the assessment results.
- Plan for the proper handling and disposal of all hazardous waste generated during recovery activities.
- Establishment of a tracking organization to monitor all assigned tasks, including developing work packages, scheduling activities, and estimating costs.
- Formation of a procedures review group to determine if specialized procedures are required and should be developed and to review and approve all special procedures.
- Continued evaluation of site or facility hazards and contamination levels during estimating exposure to workers.

#### 4.2.3 **Repair and Restoration Activities**

The following type of activities should be considered for repair and restoration activities:

- Ensure that occupation exposure limits are followed in accordance with SPP-5.1, *Radiological Controls*.
- Ensure that any discharges from recovery activities are controlled within regulatory and environmental compliance limits. If discharges are necessary beyond these limits, ensure all documentation is prepared, approvals obtained, and notifications made.
- Conduct recovery activities through normal work organizations, practices, limitations, and procedures to the extent practical.
- Replenish, repair, or replace any emergency equipment or consumable materials used during the emergency response.
- Train applicable personnel on changes that occurred as a result of repair, restoration, and accident investigation.

**5.0 LOCAL RECOVERY CENTER (LRC)**

- 5.1 The purpose of the LRC is to provide a nearsite facility for TVA recovery management as well as NRC emergency response personnel and other emergency and/or recovery personnel.
- 5.2 The LRC provides adequate space for TVA and others who may locate there to support the site should additional office space near the site become necessary during the recovery phase.
- 5.3 The LRC will provide space for NRC personnel. Adequate supplies, communications, and data necessary for them to carry out appropriate functions is available.

**6.0 ENVIRONMENTAL SAMPLE COLLECTION AND ANALYSIS**

- 6.1 The TVA emergency field monitoring vans will be used to collect appropriate samples. This sample collection will be coordinated with the State. Samples will be divided and delivered to the State and the appropriate TVA laboratory.
- 6.2 Western Area Radiological Laboratory (WARL) will perform (or coordinate performance by approved testing facilities) environmental sample analysis. Information concerning the samples will be provided to the State and the RAM.

**7.0 REFERENCES**

- \* NPG Radiological Emergency Plan  
NRC Administrative Letter 97-03  
CECC EPIP

**8.0 ABBREVIATIONS**

- WARL - Western Area Radiological Laboratory.  
\* NPG - Nuclear Power Group.  
LRC - Local Recovery Center.  
CECC - Central Emergency Control Center.  
SED - Site Emergency Director.

APPENDIX A  
Page 1 of 3  
CECC DIRECTOR'S TERMINATION CHECKLIST

	Check box when action complete	Action	Concurrence
1	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Radiation or hazardous material exposure levels within the affect plant or area(s) are stable or decreasing with time.</li> </ul> <p><input type="checkbox"/> YES      <input type="checkbox"/> NO</p>	PAM: RAM: CECC Dir.: Date:                      Time:
2	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>The affected plant is in a stable condition, and is there a high probability that it can be maintained in that condition (site-specific EPIP-16 criteria verified by CECC Plant Assessment and Radiological Assessment staffs).</li> </ul> <p><input type="checkbox"/> YES      <input type="checkbox"/> NO</p>	PAM: RAM: CECC Dir.: Date:                      Time:
3	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>Releases of hazardous material to the environment have ceased or are controlled within permissible regulatory limits, and the potential for an uncontrolled is release low.</li> </ul> <p><input type="checkbox"/> YES      <input type="checkbox"/> NO</p>	PAM: RAM: CECC Dir.: Date:                      Time:
4		<ul style="list-style-type: none"> <li>All emergency notifications have been completed.</li> </ul> <p><input type="checkbox"/> YES      <input type="checkbox"/> NO</p>	CECC Dir.: Date:                      Time:
5		<ul style="list-style-type: none"> <li>The Site Emergency Director and CECC Director, in consultation with the NRC and appropriate offsite agencies agree that no valid reason exists to continue operating in the emergency response mode.</li> </ul> <p><input type="checkbox"/> YES      <input type="checkbox"/> NO</p>	CECC Dir.: Date:                      Time:

**APPENDIX A**  
**Page 2 of 3**  
**CECC DIRECTOR'S TERMINATION CHECKLIST**

	Check box when action complete	Action	Concurrence
6	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• Document event termination on CECC EPIP-16, Appendix A, page 3 of 3 and make appropriate notifications to the affected state.</li> </ul> <p style="text-align: center;"> <input type="checkbox"/> YES      <input type="checkbox"/> NO         </p>	CECC Dir.:  Date:                      Time:
7	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• *The Chief Nuclear Officer &amp; Executive Vice President has been notified of event termination.</li> </ul> <p style="text-align: center;"> <input type="checkbox"/> YES      <input type="checkbox"/> NO         </p> <p><b>Stop here if no recovery actions are necessary.</b>            If recovery operations are necessary, continue with Steps 9 &amp; 10 and continue to CECC EPIP-16, Appendix B.</p>	CECC Dir.:  Date:                      Time:
9	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• If applicable, Initial recovery activities have been clearly identified and prioritized.</li> </ul> <p style="text-align: center;"> <input type="checkbox"/> YES      <input type="checkbox"/> NO         </p>	PAM:  RAM:  CECC Dir.:  Date:                      Time:
10	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>• If applicable, a recovery staffing plan has been developed, approved, and can be implemented.</li> </ul> <p style="text-align: center;"> <input type="checkbox"/> YES      <input type="checkbox"/> NO         </p>	PAM:  RAM:  CECC Dir.:  Date:                      Time:

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**APPENDIX A**  
 Page 3 of 3  
**CECC DIRECTOR'S TERMINATION CHECKLIST**

**EVENT TERMINATION:**

**The:**     NOUE     ALERT     SITE AREA EMERGENCY     GENERAL EMERGENCY

**Affecting:**    BFN U1 , U2 , U3     SQN U1 , U2     WBN U1

**EAL Designator:** \_\_\_\_\_

**HAS BEEN TERMINATED**

**Event Termination Time:** \_\_\_\_\_    **Date:** \_\_\_\_\_

*Call affected State and provide this information*

**State Notification Time:** \_\_\_\_\_    **Date:** \_\_\_\_\_

**CECC Director:** \_\_\_\_\_

APPENDIX B  
Page 1 of 1  
CECC DIRECTOR'S RECOVERY CHECKLIST

	Check box when action complete	Action	Concurrence
1	<input type="checkbox"/>	The recovery organization has been established.  <input type="checkbox"/> YES <input type="checkbox"/> NO	CECC Dir.:  Date:                      Time:
2	<input type="checkbox"/>	Accident Assessment and Investigation activities have been considered and implemented as determined, based on the severity of the event, including the collection and organization of all documents generated during the emergency response.  <input type="checkbox"/> YES <input type="checkbox"/> NO	CECC Dir.:  Date:                      Time:
3	<input type="checkbox"/>	The affected state agency has been contacted to coordinate any support required for assessment and recovery of affected offsite areas.  <input type="checkbox"/> YES <input type="checkbox"/> NO	CECC Dir.:  Date:                      Time:
4	<input type="checkbox"/>	Appropriate Recovery Planning and Scheduling activities have been considered and implemented as determined, based on the severity of the event.  <input type="checkbox"/> YES <input type="checkbox"/> NO	CECC Dir.:  Date:                      Time:
5	<input type="checkbox"/>	The NRC has been contacted as applicable to NRC Administrative Letter 97-03. Refer to Appendix C.  <input type="checkbox"/> YES <input type="checkbox"/> NO	CECC Dir.:  Date:                      Time:

**APPENDIX C**  
**NRC ADMINISTRATIVE LETTER 97-03**  
**Page 1 of 4**

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, D.C. 20555-0001

March 28, 1997

**NRC ADMINISTRATIVE LETTER 97-03: PLANT RESTART DISCUSSIONS FOLLOWING NATURAL  
DISASTERS**

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this administrative letter to inform addressees about a recently adopted internal practice. This practice involves coordinating the assessment of offsite recovery and onsite restart activities following a natural disaster (hurricane, tornado, flood, storm, earthquake, etc.) where offsite damage may be substantial or undetermined. This administrative letter does not transmit or imply any new or changed requirements or staff positions. No specific action or written response is required.

Background

Numerous events have occurred in recent years in which natural disasters have affected power reactor facilities. Most notable of these is Hurricane Andrew and its impact on the Turkey Point Station. The licensee for the Turkey Point plant shut the reactors down in anticipation of the storm. Onsite damage from the hurricane was extensive. After that event, the licensee repaired the damage and was ready to restart the plant before the offsite emergency preparedness infrastructure was ready to support the restart. An assessment of offsite conditions and infrastructure prior to restart was necessary to assure emergency preparedness in the event of a subsequent reactor accident.

Events have also occurred in which plants have shut down in anticipation of hurricane damage, which turned out to be minimal. Despite the absence of onsite damage, either some offsite damage occurred that affected the state of offsite emergency preparedness, or some damage occurred offsite such that the state of offsite emergency preparedness could not be determined immediately. For these cases, the NRC coordinated with the Federal Emergency Management Agency (FEMA) and the licensees involved to ensure that the restarts occurred after the offsite emergency preparedness infrastructure could safely support them.

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**NRC ADMINISTRATIVE LETTER 97-03**  
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Discussion

Although the overall responsibility for confirming the adequacy of radiological emergency preparedness of commercial nuclear power plants is vested with the NRC, it relies on FEMA's assessment of offsite emergency planning and response activities when carrying out this responsibility.

Section III of the Memorandum of Understanding (MOU) Between FEMA and the NRC, dated June 17, 1993, lists responsibilities for both agencies for cooperating in the recovery from a disaster that affects the offsite emergency preparedness infrastructure surrounding power reactors. FEMA's headquarters (HQ) in Washington, D.C., is responsible for providing findings and determinations to the NRC concerning the adequacy of offsite preparedness in the areas surrounding power reactor sites following a severe natural event. FEMA HQ bases its assessment on information from State and local governmental authorities, as well as from the affected FEMA regional office and the NRC.

In two recent instances (Hurricane Bertha, July 1996 and Hurricane Fran, September 1996), FEMA HQ chartered special evaluation teams to assess whether the offsite emergency preparedness infrastructure could support the restart of plants that had shut down in anticipation of hurricanes that affected the sites. These teams consisted of FEMA and NRC regional representatives, State and local emergency management representatives, and, in a limited capacity, power reactor licensee personnel. These teams provided assessments to FEMA HQ for its ultimate determinations that offsite emergency preparedness could support plant restart in both cases. The chartering of these special evaluation teams helped ensure a timely assessment of the condition of the offsite infrastructure and was based on experience gained with Hurricane Opal (October 1995) and the Quad Cities tornado (May 1996).

In some cases, a natural disaster may occur where onsite damage is minimal, but offsite damage may be substantial or undetermined. In these cases, the plant may be ready to start up shortly after the event. Communications in these cases between the licensee and NRC, the NRC and FEMA, and FEMA and offsite officials will be aggressive; however, stringent protocols will be observed to ensure that FEMA and the NRC operate within the guidelines of the MOU.

The NRC uses FEMA's determinations to inform power reactor licensees when the condition of the offsite emergency preparedness infrastructure can support a reactor restart. The Office of Nuclear Reactor Regulation (NRR), as well as NRC regional offices, have adopted a communication protocol that links key personnel in the two agencies and the affected licensee organization. An overview of this protocol is attached. Some of the key points of this protocol are:

1. NRC regional office personnel maintain close contact with the affected power reactor licensee to determine the state of onsite emergency preparedness and the plans for restart. The NRC regional office communicates this information rapidly to NRR.

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**NRC ADMINISTRATIVE LETTER 97-03**  
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2. FEMA regional office personnel maintain close contact with their evaluators in the field, the affected State and local emergency management officials, and the affected NRC regional office to determine the state of offsite emergency preparedness. The FEMA regional office communicates this information rapidly to FEMA HQ.
3. The final assessment that offsite emergency preparedness can support a power reactor restart originates from FEMA HQ.
4. A single individual in NRR serves as the point of contact with FEMA HQ to receive this assessment. The individual communicates this information rapidly to NRR management and the cognizant NRC regional office.
5. After the assessment from FEMA is received and discussed with NRR management, the NRC regional administrator informs the affected licensee that the condition of the offsite emergency preparedness infrastructure can support a safe reactor restart.

The NRC has developed this protocol as a result of discussions with FEMA, as well as lessons learned from Hurricane Andrew and other events. The objective of this protocol is to ensure that aggressive and rapid information flow occurs between the involved organizations following natural disasters at power reactors. The NRC expects that the use of this protocol will ensure that the determination that the condition of the offsite emergency preparedness infrastructure can support a reactor restart will be made before the licensee is actually ready to restart the reactor plant(s). In the event that the determination is not made before the licensee is ready to restart the plant(s), the NRC will evaluate the need to delay the restart through the issuance of an order or confirmatory action letter. By accomplishing this protocol, the licensee, FEMA, and NRC can provide for safe and rapid restarts of power reactors in the wake of these disasters and assure that the offsite emergency preparedness infrastructure can function as expected if called upon in an emergency.

This administrative letter requires no specific action or written response. If you have any questions about this letter, please contact the contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

signed by

Thomas T. Martin, Director  
Division of Reactor Program Management  
Office of Nuclear Reactor Regulation

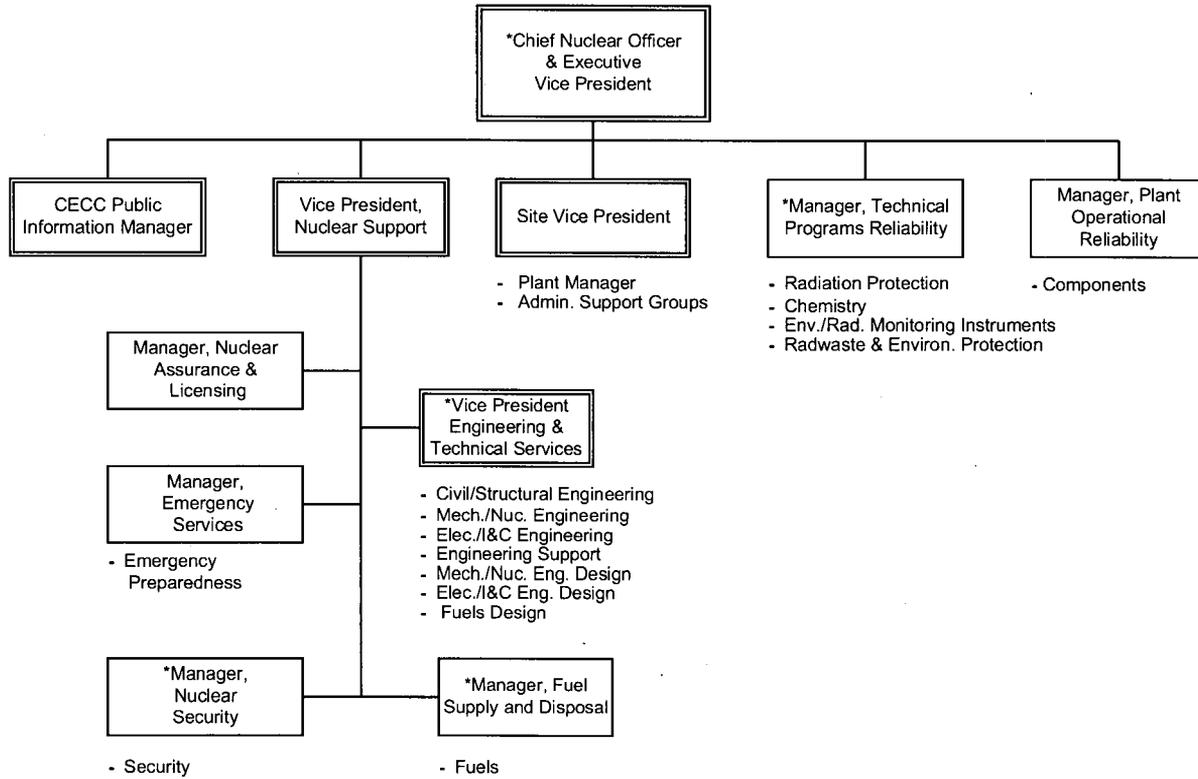
Contact: W. Maier, NRR  
(301) 415-2926  
E-mail: wam@nrc.gov

Attachments:

1. Information Flow for Restart Considerations  
Following Natural Disasters at Power Reactors

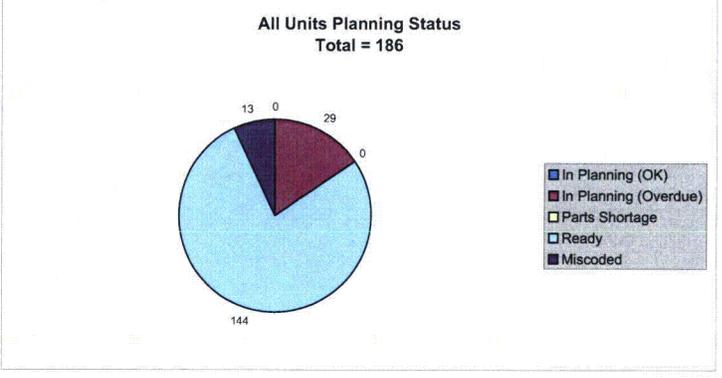
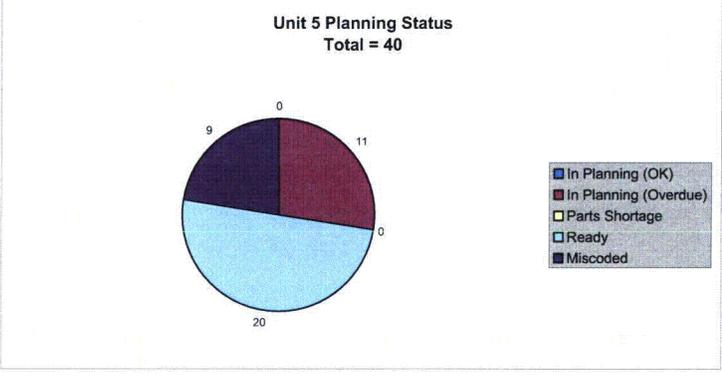
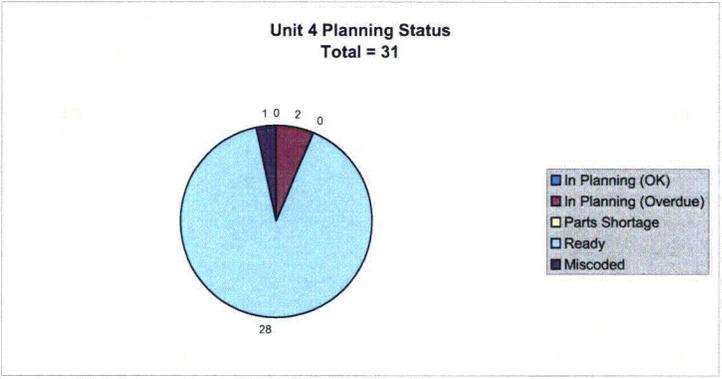
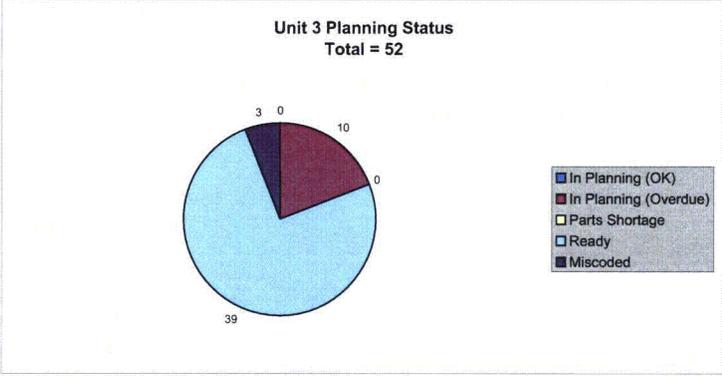
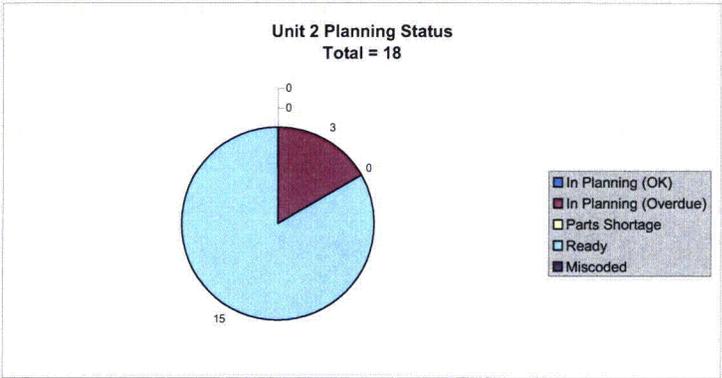
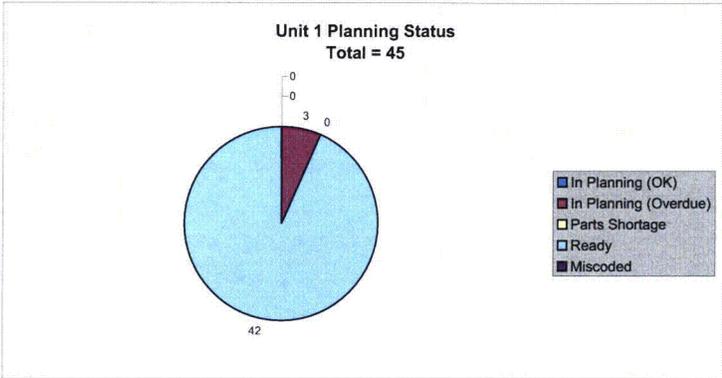


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**RECOVERY ORGANIZATION**



\*Revision

Colbert Fossil Plant  
FO/MO Planning Status



## Colbert Fossil Plant FO/MO Work Order Planning Status

Unit	Quick Turnaround (priority 011)					2-4 days (priority 012)					Full Shutdown (priority 013)					Deferred to Future Shutdown (priority 014)					Miscoded Priority	Total
	In Planning		Parts Shortage	Ready	Total	In Planning		Parts Shortage	Ready	Total	In Planning		Parts Shortage	Ready	Total	In Planning		Parts Shortage	Ready	Total		
	<= 7 days	> 7 days				<= 21 days	> 21 days				<= 21 days	> 21 days				<= 21 days	> 21 days					
F01	0	0	0	5	5	0	0	0	0	0	0	3	0	36	39	0	0	0	1	1	0	45
F02	0	0	0	0	0	0	0	0	0	0	0	3	0	13	16	0	0	0	2	2	0	18
F03	0	0	0	2	2	0	0	0	0	0	0	8	0	37	45	0	2	0	0	2	3	52
F04	0	0	0	2	2	0	0	0	0	0	0	2	0	20	22	0	0	0	6	6	1	31
F05	0	4	0	1	5	0	0	0	0	0	0	7	0	16	23	0	0	0	3	3	9	40