



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

July 17, 2006

Tennessee Valley Authority  
ATTN: Mr. Karl W. Singer  
Chief Nuclear Officer and  
Executive Vice President  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT - NRC INSPECTION REPORT  
05000259/2006013, 05000260/2006013 AND 05000296/2006013

Dear Mr. Singer:

On June 23, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Browns Ferry Nuclear Plant. The enclosed inspection report documents the inspection results, which were discussed on June 23, 2006, with Mr. B. O'Grady and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Brian R. Bonser, Chief  
Plant Support Branch 2  
Division of Reactor Safety

Docket Nos. 50-259, 05-260, 50-296  
License No. DPR-33, DPR-52, DPR-68

Enclosure: (See page 2)

Enclosure: NRC Inspection Report 05000259/2006013, 05000260/2006013, and  
05000296/2006013 w/Attachment: Supplemental Information

cc w/encl:  
Ashok S. Bhatnagar  
Senior Vice President  
Nuclear Operations  
Tennessee Valley Authority  
Electronic Mail Distribution

Larry S. Bryant, Vice President  
Nuclear Engineering & Technical Services  
Tennessee Valley Authority  
Electronic Mail Distribution

Brian O'Grady  
Site Vice President  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
Electronic Mail Distribution

Preston D. Swafford  
Senior Vice President  
Nuclear Support  
Tennessee Valley Authority  
Electronic Mail Distribution

General Counsel  
Tennessee Valley Authority  
Electronic Mail Distribution

John C. Fornicola, Manager  
Nuclear Assurance and Licensing  
Tennessee Valley Authority  
Electronic Mail Distribution

Bruce M. Aukland, Plant Manager  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
Electronic Mail Distribution

Glenn W. Morris, Manager  
Corporate Nuclear Licensing  
and Industry Affairs  
Tennessee Valley Authority  
Electronic Mail Distribution

(cc w/encl cont'd - See page 3)

TVA

3

(cc w/encl cont'd)

William D. Crouch, Manager  
Licensing and Industry Affairs  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
Electronic Mail Distribution

State Health Officer  
Alabama Dept. of Public Health  
RSA Tower - Administration  
Suite 1552  
P. O. Box 303017  
Montgomery, AL 36130-3017

Chairman  
Limestone County Commission  
310 West Washington Street  
Athens, AL 35611

Masoud Bajestani, Vice President  
Browns Ferry Unit 1 Restart  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P. O. Box 2000  
Decatur, AL 35609

Robert G. Jones, General Manager  
Browns Ferry Site Operations  
Browns Ferry Nuclear Plant  
Tennessee Valley Authority  
P. O. Box 2000  
Decatur, AL 35609

Distribution w/encl:

M. Chernoff, NRR  
E. Brown, NRR  
S. Shaeffer, RII  
RIDSNNRRDIRS  
PUBLIC

July 17, 2006

Tennessee Valley Authority  
ATTN: Mr. Karl W. Singer  
Chief Nuclear Officer and  
Executive Vice President  
6A Lookout Place  
1101 Market Street  
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT - NRC INSPECTION REPORT  
05000259/2006013, 05000260/2006013 AND 05000296/2006013

Dear Mr. Singer:

On June 23, 2006, the US Nuclear Regulatory Commission (NRC) completed an inspection at your Browns Ferry Nuclear Plant. The enclosed inspection report documents the inspection results, which were discussed on June 23, 2006, with Mr. B. O'Grady and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection no findings of significance were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA/

Brian R. Bonser, Chief  
Plant Support Branch 2  
Division of Reactor Safety

Docket Nos. 50-259, 05-260, 50-296  
License No. DPR-33, DPR-52, DPR-68

Enclosure: (See page 2)

☒ PUBLICLY AVAILABLE      ☐ NON-PUBLICLY AVAILABLE      ☐ SENSITIVE      ☒ NON-SENSITIVE

ADAMS: ☐ Yes      ACCESSION NUMBER: \_\_\_\_\_

OFFICE	RII:DRS	RII:DRP	RII:DRS				
SIGNATURE	RA	RA	RA				
NAME	LMILLER	MWIDMANN	BBONSER				
DATE	7/17/2006	7/13/2006	7/17/2006	8/ /2006	8/ /2006	8/ /2006	8/ /2006
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

DOCUMENT NAME: E:\Filenet\ML062150108.wpd

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-259, 50-260, 50-296

License No.: DPR-33, DPR-52, DPR-68

Report No: 05000259/2006013, 05000260/2006013, 05000296/2006013

Licensee: Tennessee Valley Authority

Facility: Browns Ferry Nuclear Power Plant

Location: 10833 Shaw Road  
Athens, AL

Dates: June 19-23, 2006

Inspectors: Lee Miller, Senior Emergency Preparedness Inspector  
Section 1EP2, 1EP3, 1EP4, 1EP5, 4OA1

Approved by: Brian R. Bonser, Chief  
Plant Support Branch 2  
Division of Reactor Safety

Enclosure

## SUMMARY OF FINDINGS

IR 05000259/2006013, 05000260/2006013, 05000296/2006-013; 06/19-23/2006; Browns Ferry Nuclear Plant, Units 1, 2, and 3; Baseline Inspection

The report covered an announced inspection by a Region II emergency preparedness inspector. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Emergency Preparedness

None

B. Licensee-Identified Violations.

None

## 1. REACTOR SAFETY

Cornerstone: Emergency Preparedness

### 1EP2 Alert and Notification System Testing

#### a. Inspection Scope

The inspectors evaluated the adequacy of licensee methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, "Alert and Notification System (ANS) Testing". The applicable planning standard 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," Revision 1, was also used as references.

The inspectors reviewed various documents which are listed in the Attachment to this report.

#### b. Findings

No findings of significance were identified.

### 1EP3 Emergency Response Organization (ERO) Augmentation

#### a. Inspection Scope

The inspectors reviewed the ERO augmentation staffing requirements and the process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The results of the December 20, 2005, unannounced off-hours augmentation drill was reviewed. The inspectors conducted a review of the backup notification systems. The qualification records of key position ERO personnel was reviewed to ensure ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection were reviewed to assess the effectiveness of corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, "Emergency Response Organization (ERO) Augmentation Testing." The applicable planning standard, 10 CFR 50.47(b)(2) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level (EAL) and Emergency Plan Changes

a. Inspection Scope

The inspectors evaluated the associated 10 CFR 50.54(q) reviews associated with non-administrative emergency plan, implementing procedures and EAL changes. The revision 81 of the Emergency Plan covered the period from 03/22/2005 to 06/19/2006.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 01, "Emergency Action Level and Emergency Plan Changes." The applicable planning standard, 10 CFR 50.47(b)(4) and its related 10 CFR 50, Appendix E requirements were used as reference criteria. The criteria contained in NUMARC/NESP-007, "Methodology for Development of Emergency Action Levels", Revision 2, Regulatory Guide 1.101 were also used as references.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspectors reviewed the corrective actions identified through the EP program to determine the significance of the issues and to determine if repeat problems were occurring. The facility's self-assessments and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their EP program. In addition, inspectors review licensee's self-assessments and audits to assess the completeness and effectiveness of all EP-related corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, "Correction of Emergency Preparedness Weaknesses and Deficiencies." The applicable planning standard, 10 CFR 50.47(b)(14) and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment to this report.

b. Findings

No findings of significance were identified.



#### **4. OTHER ACTIVITIES**

##### **4OA1 Performance Indicator (PI) Verification**

###### **a. Inspection Scope**

The inspectors reviewed the licensee's procedure for developing the data for the Emergency Preparedness PIs which are: (1) Drill and Exercise Performance; (2) ERO Drill Participation; and (3) ANS Reliability. The inspectors examined data reported to the NRC for the period April 1, 2005 to March 31, 2006. Procedural guidance for reporting PI information and records used by the licensee to identify potential PI occurrences were also reviewed. The inspectors verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests.

The inspection was conducted in accordance with NRC Inspection Procedure 71151, "Performance Indicator Verification." The applicable planning standard, 10 CFR 50.9 and NEI 99-02, Revision 3, "Regulatory Assessment Performance Indicator Guidelines," were used as reference criteria. This inspection activity represents three samples on an annual basis.

The inspectors reviewed various documents which are listed in the Attachment to this report.

###### **b. Findings**

No findings of significance were identified.

##### **4OA6 Meetings, including Exit**

On June 23, 2006, the inspector presented the inspection results to Mr. E. Willis, Manager - Operations, and other members of his staff acknowledged the findings. The team lead stated that additional information would be accepted and reviewed. The inspectors confirmed that proprietary information was not provided or taken during the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee personnel

B. O'Grady, Site Vice President  
J. DeDomenico, Assistant Plant Manager  
T. Elms, Manager - Operations  
T. Feltman, Emergency Preparedness  
B. Marks, Emergency Services - Corporate  
R. Delong, Site Engineering Manager  
W. Crouch, Site Licensing Manager  
J. Wallace, Site Licensing Engineer  
D. White, Nuclear Assurance

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Openned

None

#### Openned and Closed

None

#### Closed

None

#### Discussed

None

## **LIST OF DOCUMENTS REVIEWED**

### **Section 1EP2: Alert and Notification System Testing**

#### Procedures

EPIL (Emergency Preparedness Instruction Letter) -14, Facilitation of the Prompt Notification System and Pager Tests, Rev. 9

EPFS(Emergency Preparedness Field Support)-9, Inspection, Service, and Maintenance of the Prompt Notification System (PNS) at Browns Ferry, Sequoyah, and Watts Bar Nuclear Plants, Rev. 1

#### Records and Data

Reviewed the maintenance records 2<sup>nd</sup> quarter 05 - 1<sup>st</sup> quarter 06

#### Miscellaneous

Observed annual maintenance on siren #10 6/20/06

### **Section 1EP3: Emergency Response Organization (ERO) Augmentation**

#### Procedures

TRN-30, Radiological Emergency Preparedness Training, Rev. 12

EPIP-1, Emergency Classification Procedure, Rev. 40

EPIL-14, Facilitation of the Prompt Notification System and Pager Tests, Rev. 9

ETP-101, Site Emergency Director Training, Rev. 8 (lesson plan, handouts, written examination)

ETP-102, Site Technical Support Center (TSC), Rev. 7 (lesson plan, handouts, lessons learned, written examination)

ETP-103, Operations Support Center (OSC), Rev. 7, (lesson plan, handouts, lessons learned, written examination)

#### Records and Data

R92060104851, Orange Team Emergency Preparedness (EP) Unannounced Staffing Drill, 12/21/05

### **Section 1EP4:Emergency Action Level (EAL) and Emergency Plan Changes**

#### Procedures

EPIP-1, Emergency Classification Procedure, Rev. 40

EPIP-3, Alert, Rev. 30

EPIP-4, Site Area Emergency, Rev. 28

EPIP-5, General Emergency, Rev. 33

EPIP-6, Activation and Operation of the TSC, Rev. 23

Radiological Emergency Plan , Rev. 81

### Plans and Changes packages

Change package for Radiological Emergency Plan, Rev. 81  
Change package for EPIP-1, Emergency Classification Procedure, Rev. 39  
Change package for EPIP-1, Emergency Classification Procedure, Rev. 40  
Change package for EPIP-3, Alert, Rev. 30  
Change package for EPIP-2, Notification of Unusual Event, Rev. 27  
Change package for EPIP-4, Site Area Emergency, Rev. 29  
Change package for EPIP-5, General Emergency, Rev. 35  
Change package for EPIP-6, Activation and Operation of the Technical Support Center (TSC) - Rev. 24

### **Section 1EP5:Correction of Emergency Preparedness Weaknesses and Deficiencies**

#### Procedures

EPIL [Emergency Preparedness Instruction Letter] -5, EP Tracking System Activities Management Oversight System (AMOS), Rev. 5

#### Records and Data

Matrix of Scenarios versus Shift Manager and Site Emergency Directors  
PER 101086, Reutilized scenario resulted in Shift Manager being evaluated on same scenario.  
PER 79742, Ambulance Communications problems  
PER 82137, EPIP-1, Table data not displayed  
PER 81140, EPIP-3, Appendix A wrong date entered and faxed to Operations Duty Specialist  
PER 82142, OSC Staging Area craftsmen lacking Mask fits  
PER 82145, Integrated Training Drill - Containment venting not reduced or isolated  
PER 82147, 2005 Integrated Training Drill - 2-AOI 100-1 two procedure change identified  
PER 84027, Alternate Source Term and Standby Liquid Control system questions  
PER 86493, Incorrect revision of training material used during Maintenance Block training  
PER 89240, Emergency Responders - two doors marked Emergency Exits were locked shut  
PER 100950, Missed Performance Indicator during 2006 Blue Team Training Drill  
PER 100952, Discrepancy identified on EOI Team dispatched from OSC  
PER 102322, 3 of 5 candidates misapplied the Emergency Exposure Guidelines in EPIP-15

### **Section 4OA1: Performance Indicator (PI) Verification**

#### Procedures

EPIL [Emergency Preparedness Instruction Letter] -15, Emergency Preparedness Performance Indicators, Rev. 10

#### Records and Data

Documentation of DEP opportunities from Operations Simulator evaluations on 04/27/2005, 06/8/2005, 07/13/2005, 10/5/2005,11/14/05, 11/19/05, 11/21/05, 11/28/05, 12/5/05, 12/12/05  
Selected training records of drill/exercise participation by ERO personnel during 2005  
R92051201851, 2005 Radiochemistry (Post Accident Sampling) Drill, 12/1/2005  
EPIP-10, MERT, actual event 3/29/05 - contaminated injured person transported to hospital  
Blue Team Training Drill package (scenario, time line, event notification forms, player logs and completed procedures), 10/5/05

Green Team SAMG Training Drill package (scenario, time line, event notification forms, player logs and completed procedures), 4/26/06  
Red Team Training Drill package (scenario, time line, event notification forms, player logs and completed procedures), 7/13/06  
Blue Team Training Drill package (scenario, time line, event notification forms, player logs and completed procedures), 4/12/06  
Data for Drill/Exercise Performance (1 quarter 2005 - 1 quarter 2006)  
Siren weekly and monthly tests 4/05 thru 3/06  
Siren Maintenance records 4/05 thru 3/06

#### **LIST OF ACRONYMS**

ANS	Alert and Notification System
EAL	Emergency Action Level
EP	Emergency Plan
ERO	Emergency Response Organization
PI	Performance Indicator