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 NUCLEAR REGULATORY COMMISSION
 REGION II
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Report Nos.: 50-259/94-19, 50-260/94-19, 50-296/94-19

Licensee: Tennessee Valley Authority
 6N 38A Lookout Place
 Chattanooga, TN 37402-2801

Docket Nos.: 50-261, 50-260,
 and 50-296

License Nos.: DRP-23, DPR-52,
 and DPR-68

Facility Name: Browns Ferry Nuclear Plant

Inspection Conducted: August 15-19, 1994

Inspector: Alan Warren Salyers 09/12/94
 G. W. Salyers Date Signed

Approved by: K. P. Barr 9/13/94
 K. P. Barr, Chief Date Signed
 Emergency Preparedness Section
 Radiological Protection and Emergency Preparedness Branch
 Division of Radiation Safety and Safeguards

SUMMARY

Scope:

This routine, announced inspection was conducted to assess the operational readiness of the site emergency preparedness program, and included selective review of the following programmatic areas: (1) Emergency Plan and associated implementing procedures; (2) facilities, equipment, instrumentation, and supplies; (3) organization and management control; (4) training and (5) independent and internal audits and reviews.

Results:

In the areas inspected, no violations or deviations were identified. The emergency response facilities were satisfactorily maintained. The emergency kits and supplies were well organized and well stocked. The program appeared to be receiving management support. Scheduling and documentation of drills is a program strength (Paragraph 5).

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *T. Abney, (For) Manager, Browns Ferry Nuclear Plant
- *J. Brazell, Site Security
- *J. Corey, Manager, RADCON
- *T. Cornelius, Manager, Emergency Preparedness
- *A. Feltman, Emergency Preparedness
- *J. Johnson, Manager, Quality Assurance
- *R. Jones, Operations
- *R. Kitts, Corporate Emergency Preparedness
- *B. Marks, Corporate Emergency Preparedness
- *J. Sabados, Manager, Chemistry
- *G. Waldrep, Independent Review and Analysis
- *R. Wells, Manager, Compliance and Licensing

Other licensee employees contacted during this inspection included operators, security force members, technicians, and administrative personnel.

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- *R. Musser, Resident Inspector

*Attended exit interview on August 19, 1994

Abbreviations used throughout this report are listed in the last paragraph.

2. Emergency Plan and Implementing Procedures (82701)

This area was inspected to determine whether significant changes were made in the licensee's emergency preparedness program since the last inspection in this area, to assess the impact of any such changes on the overall state of emergency preparedness at the facility, and to determine whether the licensee's actions in response to actual emergencies were in accordance with the Emergency Plan and its implementing procedures. Requirements applicable to this area are found in 10 CFR 50.47(b)(16), 10 CFR 50.54(q), Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The inspector reviewed the licensee's system for making changes to the Emergency Plan and the EIPs. The inspector selected four of the approximately thirty-two procedure changes to the EIPs since January 1993, for a detailed review. The procedure change packages contained SSP-2.3, "Administration of Site Procedures" forms, Appendix B, "Procedure Control Form" and Appendix E, "Safety Assessment Form" and an annotated procedure with the changes. After reviewing the procedure change packages, the inspector concluded that procedure



changes were satisfactorily evaluated and reviewed. The changes to the EIPs reviewed by the inspector were in agreement with the Plan.

All changes were approved and distributed in accordance with the licensee's procedures. The NRC was notified within 30 days of all procedure changes as required in 10 CFR 50 Appendix E.

The inspector audited EIPs in the CR and TSC and determined that the EIPs were the latest revision.

The inspector reviewed the licensee's 10 CFR 50.72 reportable events since January 1993 to determine if emergency declarations were properly made, if required. The inspector concluded from the review that only one reportable event warranted an emergency classification:

- NOUE, May 27, 1993 - TS Required Shutdown

The inspector noted that the licensee had properly classified the event in accordance with the EALs. The applicable EIP was properly implemented, and notifications were made in a timely manner.

No violations or deviations were identified.

3. Emergency Facilities, Equipment, Instrumentation, and Supplies (82701)

This area was inspected to determine whether the licensee's ERFs and associated equipment, instrumentation, and supplies were maintained in a state of operational readiness, and to assess the impact of any changes in this area upon the emergency preparedness program. Requirements applicable to this area are found in 10 CFR 50.47(b)(8) and (9), 10 CFR 50.54(q), Section IV.E of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The inspector toured the Control Room, TSC, and OSC. The TSC was being maintained in a state of operational readiness. The OSC had office and work areas rather than a designated response area. But, the OSC area had the capability to be made operationally ready in the event of an emergency declaration. The inspector tested communication equipment and computers in the TSC and OSC. The equipment tested satisfactorily. The emergency supplies in the TSC and OSC were neatly organized, and of good quality. The inspector observed a licensee representative inspect the SCBAs stored in Unit 1, 2, and 3 CR for emergency use. The SCBAs were in excellent condition and readily available for use.

EIP-17, "Emergency Equipment and Supplies (Inventory and Operability Procedure)", listed supplies and equipment to be inventoried and tested, their test frequencies, and identified the responsible work groups.

The inspector reviewed documentation for the required task identified in EIP-17 since January 1993. All tests and inventories were performed at the specified frequency and all test results indicated the tests were satisfactory. The inspector reviewed documentation for required



communications operability test. All tests were performed at the specified frequency and all test results indicated the tests were satisfactory.

The licensee representative discussed with the inspector the normal and backup power supply for the ERF (TSC and OSC) communication system.

Communications in the TSC were powered from NODE 1. Normal load on the communication system was 45 amp-hr. NODE 1's normal power was from the site distribution system and backup power was a 700 amp-hr battery. The battery could be supplied from one of two battery chargers powered from separate safety busses or from an alternate battery charger. With a loss of normal power, the battery could supply power to the communication system for eight hours before the battery voltage decreased below the system's lower voltage limit for operation. No concerns were noted.

Communications in the OSC were supplied from NODE 2. Normal load on the communication system was 60 amp-hr. Normal power for NODE 2 was from the site's "power loop" which was subject to power losses. Backup power to NODE 2 was a 700 amp-hr battery powered by a battery charger. The emergency power for the NODE 2 and battery charger was from an industrial grade mobile emergency diesel generator parked outside of the NODE 2 building. The diesel generator was not a designated emergency power supply for NODE 2, but rather a loaned piece of equipment from the equipment pool. Therefore, no maintenance or test records were available for the diesel generator. The inspector observed that the diesel generator appeared relatively new, in good condition, and the fuel tank was full.

A three conductor power cable ran from the emergency diesel and "plugged" into a large three phase receptacle on the side of the NODE 2 building. The inspector noted that a portion of the three conductor power cable was lying in the "dirt" access road and appeared to have been frequently run over by construction equipment. This was pointed out to the licensee, and the licensee promptly contacted the appropriate personnel to reposition the cable.

The inspector reviewed documentation of bi-weekly silent tests, quarterly growl tests, and monthly full activation tests. Documentation indicated the test results were satisfactory and timely corrective actions were taken when necessary. The inspector reviewed a letter to FEMA dated January 21, 1994, that stated the licensee's sirens had an reliability rating of 99.2 percent in 1993.

The inspector concluded that the ERO facilities and emergency equipment was appropriately maintained. No violations or deviations were identified.



4. Organization and Management Control (82701)

This area was inspected to determine the effects of any changes in the licensee's emergency organization and/or management control systems in the emergency preparedness program, and to verify that any such changes were properly factored into the Emergency Plan and EIPs. Requirements applicable to this area are found in 10 CFR 50.47(b)(1) and (16), Section IV.A of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

The organization and management of the emergency preparedness program were reviewed with licensee representatives. There were no changes to the reporting chain for the site or corporate emergency preparedness organization since the last EP inspection.

No violations or deviations were identified.

5. Training (82701)

This area was inspected to determine whether the licensee's key emergency response personnel were properly trained and understood their emergency responsibilities. Requirements applicable to this area are contained in 10 CFR 50.47(b)(2) and (15), Section IV.E of Appendix E to 10 CFR Part 50, and the licensee's Emergency Plan.

Section 15 of the REP described EP training and responsibilities. TRN-30, Radiological Emergency Preparedness Training, implemented Browns Ferry EP training program addressed in Section 15 of the REP. TRN-30 contained a matrix which related ERO positions to required training courses. The inspector reviewed the matrix, and lesson plans and exams identified in the matrix. The inspector concluded that the matrix, lesson plans, and exam were adequate.

Initial and annual retraining of ERO training was conducted in a classroom environment. Initial training and retraining used the same material. Classroom training sessions consisted of a formal presentation using instructor lesson plans, a student handout, and tests.

As a verification that ERO members training was in accordance with the matrix and that their training was current, the inspector selected names of individuals from the ERO and reviewed their training records.

Individual ERO members training records were entered into computer data files. The computer was programmed so as to identify an individual needing requalification training prior to their expiration date. If an individual did not complete the retraining before their training expiration date, they were automatically dropped from the ERO call-out roster. No discrepancies were found by the inspector.



The inspector verified that the licensee had performed the required drills in accordance with Section 14 of the REP, Drills and Exercises, by reviewing documentation of their drills.

The inspector reviewed the licensee's "Drill and Exercise Fact Sheet" maintained by the EP group for 1993 and 1994. The sheet listed:

- REP Required Drills and Exercises
 - Medical Emergency Drills (Huntsville and Decatur Hospital)
 - Radiological Monitoring Drill
 - Radcon Drills (2)
 - Radiochemistry Drill
 - Radiological Dose Assessment Drill
 - Communications Drill
- Graded Exercise
- Dress Rehearsal
- Staffing Drills (3), one each for Red, Green, and Blue Teams
- Additional Training Activities
 - Accountability Drills (3), Red, Green, and Blue Teams
 - Training Drills (3), Red, Green, and Blue Teams
 - Tornado Drill
 - Rad Material Shipment Drill
 - Table-Top Training

The Fact Sheet also contained statistics on drill identified issues and grouped these issues into categories. The inspector also noted that the licensee was equally drilling the Red, Blue, and Green Teams.

The inspector randomly selected two of the drills from the Fact Sheet: May 11, 1994, Blue Team training drill and June 29, 1994 Table-Top Training. The licensee provided a documentation package associated with these drills. The inspector noted from reviewing the drill packages that the scenarios were well written, logical, and challenging. The critiques were well documented and corrective actions were tracked. Overall, the drills and packages appeared to have been developed and documented in a professional manner.

The inspector's review concluded that the licensee was organized and they were exceeding their drill commitments.

The licensee provided documentation of training for offsite support groups as required in Section 15 of the REP. The documentation indicated that in 1993 and 1994, offsite training was provided to:

- 22 Athens-Limestone Ambulance Service employees between September 29 and November 18, 1993



- 25 employees of Huntsville Hospital on March 7-8, 1994
- Local law enforcement agency personnel on March 17, 1994
- 31 employees of Decatur General Hospital on May 25-26, 1994
- 26 employees of Suburban Ambulance Service on June 21, 1994

The inspector concluded that the licensee continued to maintain the REP classroom training of the ERO and training of offsite support groups in accordance with Section 15 of the REP. No discrepancies were found by the inspector.

No violations or deviations were identified.

6. Independent and Internal Reviews/Audits (82701)

This area was inspected to determine whether the licensee had performed an independent audit of the emergency preparedness program, and whether the emergency planning staff had conducted a review of the Plan and the EIPs. Requirements applicable to this area are found in 10 CFR 50.54(t) and the licensee's Emergency Plan.

The inspector reviewed the report for the 1993 annual independent audits. The audit report reviewed was Nuclear Assurance Audit Number SSA933310 dated September 3, 1993, and was titled "Radiological Emergency Preparedness and Meteorological Monitoring". The audit covered Browns Ferry and Sequoyah Nuclear Plant. The report contained no weaknesses and five recommendations. None of the five recommendations pertained to the Browns Ferry EP program. The report was comprehensive and met the respective requirements. The 1994 audit had been conducted but the report had not been written.

Documentation provided by the licensee indicated that the EALs had been reviewed by the Alabama Department of Public Health on July 6, 1994. The State had no comments. The inspector also verified that licensee management had performed the required annual review of the Emergency Plan.

No violations or deviations were identified.

7. Exit Interview

The inspection scope and results were summarized on August 19, 1994 with those persons indicated in Paragraph 1. The inspector described the areas reviewed and discussed the inspection results in detail, including the program strengths listed in the "Summary" section of this report. No proprietary information was reviewed during this inspection.

8. Abbreviations Used in This Report

amp-hr	ampere-hour
CFR	Code of Federal Regulations
CR	Control Room
EAL	Emergency Action Level



EDG	Emergency Diesel Generator
EP	Emergency Preparedness
EPIP	Emergency Plan Implementing Procedure
ERF	Emergency Response Facility
ERO	Emergency Response Organization
FEMA	Federal Emergency Management Agency
gpm	gallons per minute
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
OSC	Operational Support Center
PAR	Protective Action Recommendation
TRN	Training Instruction
TSC	Technical Support Center

