



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30323

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Report Nos.: 50-259/88-26, 50-260/88-26, and 50-296/88-26

Licensee: Tennessee Valley Authority  
 6N 38A Lookout Place  
 1101 Market Street  
 Chattanooga, TN 37402-2801

Docket Nos.: 50-259, 50-260 and 50-296 License Nos.: DPR-33, DPR-52,  
 and DPR-68

Facility Name: Browns Ferry 1, 2, and 3

Inspection Conducted: August 29 - September 2, 1988

Inspector: Thomas R. Decker for 9/20/88  
 J. L. Kreh Date Signed

Approved by: Thomas R. Decker 9/20/88  
 T. R. Decker, Section Chief Date Signed  
 Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, unannounced inspection was conducted in the area of emergency preparedness, and included review of the following programmatic elements: (1) emergency detection and classification, (2) protective action decision-making, (3) notifications and communications, (4) shift staffing and augmentation, and (5) training.

Results: In the area inspected, no violations or deviations were identified. The findings of this inspection indicated that the licensee was adequately prepared to respond to an emergency at the Browns Ferry Nuclear Plant.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*M. Bolch, Radiological Emergency Preparedness Program Manager
- W. Brown, Shift Operations Supervisor
- \*G. Campbell, Plant Manager
- \*N. Catron, Program Manager, Emergency Preparedness Branch (Corporate)
- A. Clement, Project Manger
- T. Cornelius, Project Engineer
- \*W. Ivey, Compliance Licensing Engineer
- R. Kitts, Chief, Emergency Preparedness Branch (Corporate)
- D. Maehr, Engineer Aide
- \*B. Marks, Supervisor, Emergency Preparedness Program (Corporate)
- \*R. McKeon, Plant Support Superintendent
- M. Miller, Shift Operations Supervisor
- W. Percle, Project Manager

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

#### NRC Resident Inspectors

- \*C. Brooks
- \*D. Carpenter

\*Attended exit interview

### 2. Emergency Detection and Classification (82201)

Pursuant to 10 CFR 50.47(b)(4); 10 CFR Part 50, Appendix E, Sections IV.B and IV.C; and Sections 4.0 and A.1 of the licensee's Radiological Emergency Plan (REP), this program area was inspected to determine whether the licensee used and understood a standard emergency classification and action level scheme.

Selected emergency action levels (EALs) specified in the licensee's classification procedure were reviewed. The reviewed EALs appeared to be generally consistent with the initiating events specified in Appendix 1 of NUREG-0654 and the REP. The inspector noted that some of the EALs were based on parameters obtainable from Control Room instrumentation.

The inspector verified that the licensee's notification procedures included criteria for initiation of offsite notifications and for development of protective action recommendations. The procedures required that offsite notifications be made promptly (via the Operations Duty Specialist in Chattanooga, TN) after declaration of an emergency.

The inspector discussed with licensee representatives the coordination of EALs with State officials. Documentation showed that state officials had reviewed the EALs during June 1988 with State and local officials, and that these officials agreed with the EALs used by the licensee.

The responsibility and authority for classification of emergency events and initiation of emergency action were prescribed in licensee procedures and in the emergency plan. Interviews with selected key members of the licensee's emergency organization revealed that these personnel understood their responsibilities and authorities in relation to accident classification, notification, and protective action recommendations.

Walk-through evaluations involving accident classification problems were conducted with two Shift Operations Supervisors. Both individuals properly classified the hypothetical accident situations presented to them, and appeared to be familiar with appropriate classification procedures.

No violations or deviations were identified.

### 3. Protective Action Decision-Making (82202)

Pursuant to 10 CFR 50.47(b)(9) and (10); 10 CFR Part 50, Appendix E, Section IV.D.3; and Section 100 of the Radiological Emergency Plan, this area was inspected to determine whether the licensee had 24-hour-per-day capability to assess and analyze emergency conditions and make recommendations to protect the public and onsite workers.

The inspector discussed responsibility and authority for protective action decision-making with licensee representatives and reviewed pertinent portions of the licensee's emergency plan and procedures. The plan and procedures clearly assigned responsibility and authority for accident assessment and protective action decision-making. Interviews with members of the licensee's emergency organization showed that these personnel understood their authorities and responsibilities with respect to accident assessment and protective action decision-making.

Walk-through evaluations involving protective action decision-making were conducted with two Shift Operations Supervisors, who appeared to be cognizant of appropriate onsite protective measures and aware of the range of protective action recommendations appropriate to offsite protection. Personnel interviewed were aware of the need for timeliness in making initial protective action recommendations to offsite officials. Interviewees demonstrated adequate understanding of the requirement that protective action recommendations be based on core condition and containment status even if no release is in progress.

No violations or deviations were identified.

#### 4. Notification and Communication (82203)

Pursuant to 10 CFR 50.47(b)(5) and (6); 10 CFR Part 50, Appendix E, Section IV.D; and Sections 5.C and 6.0 of the Radiological Emergency Plan, this area was inspected to determine whether the licensee was maintaining a capability for notifying and communicating with its own personnel, offsite supporting agencies and authorities, and the populace of the 10-mile emergency planning zone (EPZ) in the event of an emergency.

The inspector reviewed the licensee's notification procedures. The procedures were consistent with the emergency classification and EAL scheme used by the licensee. The inspector determined that the procedures made provisions for message verification.

The inspector determined by review of applicable procedures and by discussion with licensee representatives that adequate procedural means existed for alerting, notifying, and activating emergency response personnel. The procedures specified when to notify and activate the onsite emergency organization, corporate support organization, and offsite agencies.

The content of initial emergency messages was reviewed. The initial messages appeared to meet the guidance of NUREG-0654, Criteria II.E.3 and II.E.4. The format and content of the initial emergency messages had been reviewed by State and local government authorities.

The licensee's management control program for the prompt notification system was reviewed. According to licensee documentation and discussions with licensee representatives, the system consisted of 54 fixed sirens, 5 mobile sirens, and numerous tone-alert radios. A review of licensee records verified that the system as installed was consistent with the description contained in the REP. Maintenance of the system was provided by the licensee. The licensee had recently completed installation of 45 additional sirens intended to eliminate the need for mobile-siren routes in the 5- to 10-mile annulus. Completion of the activation system for the new sirens was expected in December, 1988.

Communications equipment in the Control Room, OSC and TSC was inspected. Provisions existed for prompt communications among emergency response organizations, to emergency response personnel, and to the public. The installed communications systems at the emergency response facilities were consistent with system descriptions in the REP.

The inspector reviewed licensee records for the period March 1988 to August 1988 which indicated that communications tests were conducted at the required frequencies. Licensee records also revealed that corrective action was taken on problems identified during communications tests.

No violations or deviations were identified.

5. Shift Staffing and Augmentation (82205)

Pursuant to 10 CFR 50.47(b)(2) and 10 CFR Part 50, Appendix E, Sections IV.A and IV.C, this area was inspected to determine whether shift staffing for emergencies was adequate both in numbers and in functional capability, and whether administrative and physical means were available and maintained to augment the emergency organization in a timely manner.

Shift staffing levels and functional capabilities of all shifts were reviewed and found to be consistent with the guidance of Table B-1 of NUREG-0654. The licensee used an Automated Paging System (APS) for expediting the notification of the plant emergency response organization. The APS was a computerized, manu-driven system which activated radio pagers via one transmitter onsite and several offsite. Weekly, unannounced tests of the APS were conducted. The APS, activated by the Shift Operations Supervisor's clerk, appeared to be effective in meeting Table B-1 goals.

The inspector discussed staff augmentation times with licensee representatives, who provided documentation of an unannounced, off-shift drill on August 17, 1988, in which TSC activation occurred within 60 minutes of the Alert declaration, as required. The inspector reviewed records of weekly APS tests, the results of which provided a continuing demonstration that staff augmentation times would be generally consistent with Table B-1 guidance in the event of an actual activation of the emergency response organization.

No violations or deviations were identified.

6. Knowledge and Performance of Duties (Training) (82206)

Pursuant to 10 CFR 50.47(b)(15) and 10 CFR Part 50, Appendix E, Section IV.F, this area was inspected to determine whether personnel understood their emergency response roles and could perform their assigned functions.

The inspector conducted walk-through evaluations with selected key members of the emergency organization. During these walk-throughs, individuals were given various hypothetical sets of emergency conditions and data and asked to talk through the response they would make if such an emergency actually existed. The individuals demonstrated familiarity with emergency procedures and equipment, and no problems were observed in the areas of emergency detection and classification, notifications, and protective action decision-making.

No violations or deviations were identified.

7. Action On Previous Inspection Findings

- a. (Closed) Inspector Follow-Up Items (IFIs) 260/85-52-06 and 260/85-52-07: Due to editorial error, these two items were closed

for Units 1 and 3, but not for Unit 2, in NRC Inspection Report No. 50-259, 260, 296/87-30. This closure corrects that error.

- b. (Closed) IFI 259, 260, 296/85-52-08: Review FEMA 43 documentation when available.

This document will be reviewed upon issuance as part of the NRC's routine inspection program; thus, performance of such a review will no longer be tracked as an open item.

#### 8. Exit Interview

The inspection scope and results were summarized on September 2, 1988, with those persons indicated in Paragraph 1. Although proprietary information was reviewed during this inspection, none is contained in this report.