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

DEC 09 1985

Report Nos.: 50-259/85-52, 50-260/85-52, and 50-296/85-52

Licensee: Tennessee Valley Authority
6N11 B Missionary Ridge 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: November 12-14, 1985

Inspector: _____ 12/5/85
W. M. Sartor, Jr., Team Leader Date Signed

Accompanying Personnel: A. Tabaka
G. Arthur
D. Fisher
G. Wehmann
P. Will

Approved by: _____ 12/5/85
T. R. Decker, Section Chief Date Signed
Division of Radiation Safety and Safeguards

SUMMARY

Scope: This routine, announced inspection involved 145 inspector-hours onsite in the area of an emergency preparedness exercise.

Results: Of the areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*R. L. Lewis, Plant Manager
*T. F. Ziegler, Site Director
*L. W. Ivey, Quality Assurance
*J. E. Swindell, Plant Superintendent (Ops & Engr)
*B. C. Morril, Compliance
*S. H. Rudge, Site Services
*J. B. Shaw, Engineering
*J. M. Pleva, Site Services
*T. E. Adkins, Nuclear Services, REP Staff
*A. Schenk, Nuclear Services, REP State Supervisor
*E. Webb, REP Coordinator
*M. Skinner, Site Services
*E. Kiessling, Site Services
*D. C. Mims, Engineering
*A. Sorrell, Health Physicist
*H. M. Crowson, Health Physicist
*J. M. Corey, Health Physicist
*E. Kingery, Health Physicist
*J. Lobdul, Radiological Health
*J. R. Clark, Chemistry
*J. Hutton, Chattanooga Nuclear Services
*R. Kitts, Chattanooga Nuclear Services
*L. Condra, Chattanooga Nuclear Services
*T. D. Cosh, Maintenance
*B. McKeon, Operations

Other licensee employees contacted included engineers, technicians, operators, security force members, and office personnel.

NRC Resident Inspectors

*G. Paulk
*C. Patterson
C. Brooks

*Attended exit interview

2. Exit Interview (30703)

The inspection scope and findings were summarized on November 14, 1985, with those persons indicated in paragraph 1 above. The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters (92700)

This subject was not addressed in the inspection.

4. Exercise Scenario (82301)

The scenario for the emergency exercise was reviewed to determine that provisions had been made to test the integrated capability and a major portion of the basic elements existing within the licensee, state, and local emergency plans and organizations as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, paragraph IV.F and specific criteria in NUREG-0654, Section II.N.

The scenario was reviewed in advance of the scheduled exercise date and was discussed with licensee representatives on several occasions. While no major problems with the scenario were identified during the review, several inconsistencies became apparent during the exercise. These inconsistencies failed to detract from the overall performance of the licensee's emergency organization. Scenario problems were discussed with management representatives during the exercise critique on November 14, 1985.

No violations or deviations were identified.

5. Assignment of Responsibility (82301)

This area was observed to determine that primary responsibilities for emergency response by the licensee have been specifically established and that adequate staff was available to respond to an emergency as required by 10 CFR 50.47(b)(1), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.A.

The inspectors verified that the licensee made specific assignments to the emergency organization. The inspectors observed the activation, staffing, and operation of the emergency organization in the Shift Engineer's office, the Technical Support Center (TSC), the Operations Support Center (OSC), and the Central Emergency Control Center (CECC). At each of these centers, the assignment and demonstration of responsibility appeared to be consistent with the licensee's emergency plan with one exception. After the CECC was activated, a protective action recommendation (PAR) was transmitted to the State from the CECC without the Director's knowledge. The responsibility for coordinating PARs with the State is assigned to the CECC Director. The failure to demonstrate this assignment of responsibility is considered an exercise weakness (50-259, 260, 296/85-52-01). The licensee also identified this problem for follow-up.

No violations or deviations were identified.

6. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to determine that the responsibilities for emergency response had been unambiguously defined,

that adequate staffing was provided to insure initial facility accident response in key functional areas at all times, and that the interfaces were specified as required by 10 CFR 50.54(b)(2), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.B.

The inspectors determined that the licensee's onsite emergency organization was effective in dealing with the simulated emergency. Adequate staffing of the emergency response facilities was provided for the initial accident response and the interfaces between the onsite organization and offsite support agencies appeared to be adequate.

No violations or deviations were identified.

7. Emergency Response Support and Resources (82301)

This area was observed to determine that arrangements for requesting and effectively using assistance resources had been made and that other organizations capable of augmenting the planned response were identified as required by 10 CFR 50.47(b)(3), 10 CFR 50, Appendix E, paragraph IV.A, and specific criteria in NUREG-0654, Section II.C.

Licensee contact with offsite organizations was prompt and assistance resources from various agencies were prepared to assist in the simulated emergency.

No violations or deviations were identified.

8. Emergency Classification System (82301)

This area was observed to determine that a standard emergency classification and action level was in use by the nuclear facility licensee as required by 10 CFR 50.47(b)(4), 10 CFR 50, Appendix E, paragraph IV.C, and specific criteria in NUREG-0654, Section II.D.

An inspector observed that the emergency classification system was in effect as stated in the radiological emergency plan and the implementing procedures. The system appeared to be adequate for the classification of the simulated accident and the emergency procedures provided for initial and continuing mitigating actions during the simulated emergency.

No violations or deviations were identified.

9. Notification Methods and Procedures (82301)

This area was observed to determine that procedures had been established for notification by the licensee of State and local response organizations and emergency personnel, and that the content of initial and followup messages to response organizations had been established; and means to provide early notification to the populace within the plume exposure pathway have been established as required by 10 CFR 50.47(b)(5), 10 CFR 50, Appendix E, paragraph IV.D, and specific criteria in NUREG-0654, Section II.E.

An inspector observed that notification methods and procedures had been established to provide information concerning the simulated emergency conditions to Federal, State, and local response organizations and to alert the licensee's augmented emergency response organization. Notifications appeared to be made in accordance with procedures with the exception of the documentation of the initial notification from the shift engineer's office. The failure to document emergency notification in accordance with the REP implementing procedures is identified as an exercise weakness (50-259, 260, 296/85-52-02). The licensee acknowledged this concern and agreed to investigate to determine if corrective action is necessary.

10. Emergency Communications

This area was observed to determine that provisions existed for prompt communications among the principal response organization and emergency personnel as required by 10 CFR 50.57(b)(6), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.F.

Although provisions were in place to provide prompt communications, some difficulties were observed during the exercise. The telephone communications among the emergency response organizations appeared adequate, however, the radio communications between the CECC and field assessment teams were marginal to inadequate throughout the exercise due to hardware problems. This exercise weakness was also identified by the licensee for corrective action. This area will be reviewed during subsequent inspections (50-259, 260, 296/85-52-03).

No violations or deviations were identified.

11. Public Education and Information

This area was observed to determine that information concerning the simulated emergency had been made available for dissemination to the public as required by 10 CFR 50.47(b)(7), 10 CFR 50, Appendix E, paragraph IV.D, and specific criteria in NUREG-0654, Section II.G.

Information was provided to the media and the public in advance of the exercise. The information included details on how the public would be notified and what initial actions they should take in an emergency. A rumor control program was in place.

A Near Site Media Center was established at the Calhoun State Community College. The news center was well coordinated and equipped with one exception. Although placards placed in the media room indicated that the telephones for media use would be available in an actual emergency, the telephone lines to support this are not installed. Licensee representatives indicated that recent feedback from the telephone company indicated that the lines should be available within a few months. This area will be reviewed during subsequent inspections to insure the capability to support the media with telephones is as indicated by the licensee (50-259, 260, 296/85-52-04).

12. Emergency Facilities and Equipment (82301)

This area was observed to determine that adequate emergency facilities and equipment to support an emergency response were provided and maintained as required by 10 CFR 50.47(b)(8), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.H.

The inspectors observed the activation, staffing, and operation of the emergency response facilities and evaluated equipment provided for emergency use during the exercise.

a. Control Room - Prior to activation of the TSC, the emergency responsibilities were with the Shift Engineer in the Shift Engineer's Office. The Shift Engineer and staff acted promptly to initiate emergency response to the simulated emergency.

b. Technical Support Center (TSC) - The TSC was activated and staffed promptly upon notification by the Emergency Director of the simulated emergency conditions. The TSC staff appeared to be knowledgeable concerning their emergency responsibilities. The TSC appeared to have adequate equipment for the support of the assigned staff. However, an inspector observed that Attachment A to IP-20 - Technical Support Center (TSC) Operations was out of date. It listed instruments on the data sheet that no longer existed and omitted others that should have been listed. This need to update data sheets to IP-20 to reflect current plant status is identified as an exercise weakness (50-259, 260, 296/85-52-05). The licensee agreed to review and make corrections as required.

c. Operations Support Center (OSC) - The OSC was staffed promptly upon activation by the Emergency Director. An inspector observed that teams dispatched from the OSC were promptly formed and adequately briefed prior to dispatch.

d. Central Emergency Control Center (CECC) - The CECC is located in Chattanooga, Tennessee. The facility appears to be adequately designed, equipped, and staffed to support an emergency response.

No violations or deviations were identified.

13. Accident Assessment (82301)

This area was observed to determine that adequate methods, systems, and equipment for assessing and monitoring actual or potential offsite consequences of a radiological emergency condition were in use as required by 10 CFR 50.47(b)(9), 10 CFR 50, Appendix E, paragraph IV.B, and specific criteria in NUREG-0654, Section II.I.

The accident assessment program included both an engineering assessment of plant status and an assessment of radiological hazards to both onsite and offsite personnel resulting from the accident. A scenario inconsistency

resulted in confusion regarding the initial release that provided for the declaration of the Site Area Emergency. Specifically, no controller message was available to permit an assessment as to the cause or source of the release. With the exception of this scenario induced problem, the engineering accident assessment team functioned effectively in analyzing the plant status so as to make recommendations to the Site Emergency Director concerning mitigating actions to reduce damage to plant equipment, to prevent release of radioactive materials, and to terminate the emergency condition.

No violations or deviations were identified.

14. Protective Responses (82301)

This area was observed to determine that guidelines for protective actions during the emergency, consistent with Federal guidance, were developed and in place, and protective actions for emergency workers, including evacuation of nonessential personnel, were implemented promptly as required by 10 CFR 50.47(b)(10), and specific criteria in NUREG-0654, Section II.J.

An inspector verified that the licensee had and used emergency procedures for formulating protective action recommendations for offsite populations within the ten mile EPZ. The licensee's protective action recommendations were consistent with the EPA and other criteria and notifications were made to the appropriate State and local authorities within the 15 minute criteria.

Inspectors observed that many of the onsite personnel were not adequately informed of the events occurring to make appropriate protective responses. This appeared to be primarily caused by both the poor audibility of the plant's public address system and the failure to make public announcements when significant events occurred. This failure to adequately provide for the protective response of onsite personnel was identified as an exercise weakness (50-259, 260, 296/85-52-06). The licensee also identified this problem area and agreed to evaluate it for corrective action.

15. Radiological Exposure Control (82301)

This area was observed to determine that means for controlling radiological exposures in an emergency were established and implemented for emergency workers and that they included exposure guidelines consistent with EPA recommendations as required by 10 CFR 50.47(b)(11), and specific criteria in NUREG-0654, Section II.K.

An inspector noted that radiological exposures were controlled for in-plant personnel throughout the exercise by issuing emergency workers supplemental dosimeters and by periodic surveys. Exposure guidelines were in place for various categories of emergency actions.

An incident occurred offsite involving Browns Ferry Health Physics personnel who were supporting a State of Alabama medical drill to evaluate offsite

medical response in support of a radiological contaminated patient. A small area and five TVA employees were contaminated when short-lived technetium-99m (six hour half-life) was used in conjunction with the simulated medical emergency. This inadvertent offsite contamination was not part of the scenario for the on-site exercise and any related findings will be included in the Federal Emergency Management Agency's (FEMA) report.

16. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to determine that deficiencies identified as a result of the exercise and weaknesses noted in the licensee's emergency response organization were formally presented to licensee management for corrective actions as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.N.

A formal licensee critique of the emergency exercise was held on November 14, 1985, with exercise controllers, key exercise participants, licensee management, and NRC personnel attending. The licensee's critique was thorough and critical. Of the many comments provided, licensee representatives indicated approximately 30 items have been selected for followup. Of the six items identified as exercise weaknesses in this report, the licensee had identified three of them. Followup of corrective actions taken by the licensee will be accomplished through subsequent NRC inspections.

No violations or deviations were identified.

17. Inspection Followup (92701)

a. (Closed) Inspector Followup Item (IFI) 50-259, 260, 296/81-19-19: Inadequate temperature difference recorder. The older MET data recorder in the control room was replaced by a Digital Decwriter III which corrected this item.

b. (Closed) IFI 50-259, 260, 296, 296/81-19-35: Cross-reference EOI and emergency instructions in IDP. The Emergency Operating Instructions are being rewritten and the adequacy of their cross-referencing will be observed during future inspections. This IFI will now be followed as IFI 50-259, 260, 296/85-52-07.

c. (Closed) IFI 50-259, 260, 296/82-31-01: Document and establish schedules for testing or evaluating the PNS system. The FEMA-43 document dated September 1983 provided new guidance for PNS evaluation. Accordingly, the FEMA scheduling and evaluation of the PNS system will be supporting documentation for the final closure of this issue, which will now be tracked as IFI 50-259, 260, 296/85-52-08.

d. (Closed) IFI 50-259, 260, 296/84-42-01: Procedures do not explicitly address barrier criteria. Procedures now address barrier criteria.

e. (Closed) IFI 50-259, 260, 296/84-42-03: Control Room exercise log. The Shift Engineer maintained an exercise log.

f. (Closed) IFI 50-259, 260, 296/84-42-04: Communications and coordination for OSC. Adequate communications and coordination of activities from the OSC were observed throughout the exercise.