



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

NOV 21 1984

Report Nos.: 50-259/84-42, 50-260/84-42, and 50-296/84-42

Licensee: Tennessee Valley Authority
500A Chestnut Street
Chattanooga, TN 37401

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: October 23-25, 1984

Inspectors: T.R. Decker
T. R. Decker, Team Leader

I. Shockey for
W. M. Sartor, Radiation Specialist

11/20/84

Date Signed

11/20/84

Date Signed

Accompanying Personnel: W. Thomas, J. Pappin, D. Baker, F. McManus

Approved by: W.E. Cline
W. E. Cline, Section Chief
Emergency Preparedness Section
Division of Radiation Safety and Safeguards

11/20/84

Date Signed

SUMMARY

Scope: This routine, announced inspection involved 110 inspector-hours on site in the area of a small-scale emergency exercise.

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

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REPORT DETAILS

1. Licensee Employees Contacted

*G. Jones, Plant Manager
*J. Swindell, Superintendent - Operations/Engineering
*A Sorrell, Health Physics Supervisor
*J. Rawlston, Health Physics - Shift Supervisor
*W. Stevenson, TVA Information Officer
*E. Sliger, Emergency Preparedness Supervisor
*T. Chinn, Technical Services Manager
*J. Pittman, Superintendent - Maintenance
*R. Smallwood, Assistant Operations Group Supervisor
*B. Morris, Plant Compliance Supervisor
*T. Cosby, Electrical Maintenance Supervisor
*J. Clark, Chemical Unit Supervisor
*R. Jackson, Chief, Public Safety
*D. Mims, Engineering Group Supervisor

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

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on October 25, 1984, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Enforcement Matters (92702)

(Closed) Violation 259, 260, 296/83-40-01, Failure to incorporate procedures for protective action recommendations consistent with Federal guidance. The inspector reviewed the licensee's procedures and determined that they are acceptable with respect to Federal guidance.

(Closed) Violation 259, 260, 296/83-40-02, Inadequate training for protective action decision making. The inspector reviewed training records and determined that the appropriate training had been provided.

(Closed) Violation 259, 260, 296/83-40-03, Failure to control documents. The inspector reviewed the licensee's response and determined it to be acceptable.

4. Exercise Scenario (82301)

The scenario for this small scale 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's emergency plan and organization 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 developed for this exercise was adequate to fully exercise the onsite and offsite emergency organizations of the licensee and provided sufficient emergency information to the State and local government agencies for their limited participation in the exercise. 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 detracted from the overall performance of the licensee's emergency organization. Scenario problems were discussed by management representatives during the exercise critique on October 25, 1984.

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 had 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 has made specific assignments to the emergency organization. The inspectors observed the activation, staffing and operation of the emergency organization in the Control Room, Technical Support Center (TSC), Operational Support Center (OSC), and Central Emergency Control Center (CECC). At each of these centers, the assignment of responsibility and staffing appeared to be consistent with the licensee's approved procedures. The inspectors had no further questions in this area.

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 were 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 50.47(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. The inspectors had no further questions in this area.

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. The inspector had no further questions in this area.

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 scheme was in use by the nuclear facility licensee as required by 10 CFR 50.50.47(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 in the Implementing Procedures. It was noted, however, that initiating conditions described in the implementing procedures (IP-1) failed to explicitly define emergency action levels based on barrier criteria (i.e., loss of 2 of 3 fission product barriers with a potential loss of a 3rd barrier) as described in Appendix I to NUREG-0654. Even though, according to the scenario, this condition was met, no consideration of barrier criteria was observed in the TSC. This issue was discussed with licensee representatives following the exercise and identified as an item of significant concern during the exit. Licensee representatives stated that they were presently investigating the problem. This finding will be reviewed during a subsequent inspection (50-259, 260, 296/84-42-01).

No violations or deviations were identified.

9. Notification Methods and Procedures (82301)

This area was observed to determine that procedures for notification by the licensee of State and local response organizations and emergency personnel, the content of initial and followup message to response organizations, and

means to provide early notification to the populace within the plume exposure pathway had 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 and were used 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. During the initial stages of the exercise, the shift engineer was performing the duties of a communicator by making the Alert notification telephone calls. During this period he failed to function as an effective emergency director. The inspector stated that the licensee could alleviate the situation by identifying an assistant who would make the notifications under the direction of the shift engineer. This finding will be reviewed during a subsequent inspection (50-259, 260, 296/84-42-02).

No violations or deviations were identified.

10. Emergency Communications (82301)

This area was observed to determine that provisions exist for prompt communications among principal response organizations and emergency personnel as required by 10 CFR 50.47(b)(6), 10 CFR 50, Appendix E, paragraph IV.E, and specific criteria in NUREG-0654, Section II.F.

A scenario induced "hold" created some confusion in transmitting radiological data to the State, otherwise, communications among the licensee's emergency response facilities and emergency organization and between the licensee's emergency response organization and offsite authorities were good. No communications related problems were identified during this exercise.

No violations or deviations were identified.

11. Public Education and Information (82301)

This area was observed to determine that information concerning the simulated emergency was 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 Near Site Media Center was established and was well equipped and coordinated. The inspector had no further questions in this area. A Regional Assistant Committee representative who was observing offsite public information

activities reported an apparent weakness in the public information program to the inspector. It was noted that a public information officer at a local Emergency Operations Center (EOC) apparently made direct contact with the site in an effort to get current information on plant status due to a perceived delay in data transmission to the EOC through proper channels as prescribed by procedures. This resulted in the apparent transmittal of incorrect information and caused some confusion at the local level. To prevent recurrence, it is imperative that proper communication procedures be maintained. The licensee recognizes the situation and intends corrective action.

No violations or deviations were identified.

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 - An inspector observed that control room personnel acted promptly to initiate emergency response to the simulated emergency. Emergency procedures were readily available and the response was prompt and effective. The inspector noted that no formal log of exercise events was maintained in the control room. The inspector discussed the value that a properly kept log could have in reconstructing events. This routine observer finding will be reviewed during a future exercise (50-259, 260, 296/84-42-03).
- 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 and TSC operations proceeded smoothly. The TSC appeared to have adequate equipment for the support of the assigned staff. The inspectors had no further questions in this area.
- c. Operations Support Center (OSC) - The OSC was staffed promptly upon activation by the Emergency Director. An inspector observed that teams were formed promptly, briefed and dispatched. Communications and coordination difficulties were recurring problems. Damage control teams were sent to locations only to find that Health Physics would not allow access. Similarly, Health Physics teams were improperly denied access by other teams. Also, the shift engineer was unaware that

members of the fire brigade had remained in the reactor building after the evacuation alarm had sounded. The fire brigade commander should have advised the shift engineer of his actions. This routine observer finding will be reviewed during a subsequent exercise (50-259, 260, 296/84-42-04). The inspector had no further questions in this area.

- d. Central Emergency Control Center - The CECC is located in Chattanooga, Tennessee. The facility appears to be adequately designed, equipped and staffed to support an emergency response. The inspector had no further questions in this area.

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. During the exercise, 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.

Radiological assessment activities are spread over several groups. A group in the TSC was effectively estimating the radiological impact based on the stack release rate as described in the procedures. More refined dose calculations were performed at the CECC by using computer models.

The dose assessment procedures used in the CECC incorporated detailed meteorological parameters which were available from the onsite meteorological instruments. Default values were available for use should there be any question concerning the reliability of the meteorological instrumentation. The inspector had no further questions in this area.

No violations or deviations were identified.

14. Protective Responses (82301)

This areas 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 10 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.

An inspector observed that protective actions were instituted for on-site emergency workers which included periodic radiation surveys in the facility, evacuation of nonessential personnel, and continued accountability of emergency response personnel. The inspector had no further questions in this area.

No violations or deviations were identified.

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 throughout the exercise by issuing emergency workers supplemental dosimeters and by periodic surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions and adequate protective clothing and respiratory protection was available and used as appropriate. The inspector had no further questions in this area.

No violations or deviations were identified.

16. Fire Brigade Response (82301)

This area was observed to determine that arrangements are made for fire brigade response as required by 10 CFR 50, Appendix E, paragraph IV.F, and specific criteria in NUREG-0654, Section II.N.

An inspector observed the fire brigade activities at the fire scene. In all portions of the exercise, appropriate judgement was displayed with regard to fire brigade response as well as health physics and security support. The inspector had no further questions in this area.

No violations or deviations were identified.

17. Recovery and Reentry Planning (82301)

This area was observed to determine that general plans were made for recovery and re-entry as required by 10 CFR 50.47(b)(13), 10 CFR 50, Appendix E, paragraph IV.H. and specific criteria in NUREG-0654, Section II.M.

The licensee developed general plans and procedures for re-entry and recovery which addressed both existing and potential conditions. The inspector had no further questions in this area.

No violations or deviations were identified.

18. 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 October 25, 1984, with exercise controllers, key exercise participants, licensee management and NRC personnel attending. Many of the deficiencies and weaknesses in the emergency preparedness program, identified as a result of this exercise were presented. Followup of corrective actions taken by the licensee identified deficiencies and weaknesses will be accomplished through subsequent NRC inspections.

No violations or deviations were identified.

19. Inspector Followup (92701)

- a. (Closed) Inspector Followup Item (IFI) 82-38-04: Improved information flow. The licensee demonstrated improved information flow during the 1984 exercise.
- b. (Closed) IFI 82-38-05: Increase control and coordination measures for news information. The licensee's exercise response was acceptable.
- c. (Closed) IFI 82-38-06: Use status boards more effectively. The licensee's use of status boards was acceptable.
- d. (Closed) IFI 82-38-08: Improve radiological contamination control measures used during accident response. The licensee's contamination control measures were acceptable during the exercise.
- e. (Closed) IFI 83-40-04: Followup on corporate audit response. The inspector reviewed the licensee's response to QA audit report CH 83 TS-02 in an October 26, 1983 letter from H. Green to R. Lumpkin and found the response acceptable.
- f. (Closed) IFI 83-48-01: Include radiation data on controller data sheets. Appropriate data was provided.

- g. (Closed) IFI 83-48-02: Exercise simulation - token control room operator participation. Operator participation was appropriate.
- h. (Closed) IFI 83-48-04: Communication equipment improvements. Improved equipment was provided.
- i. (Closed) IFI 83-48-05: Provide more frequent press briefings. The number of press briefings was acceptable.
- j. (Closed) IFI 83-48-06: TSC map to include evacuation sectors. Evacuation sectors were provided.
- k. (Closed) IFI 83-48-07: Status boards provided for each unit. Display of plant status was acceptable.
- l. (Closed) IFI 83-48-08: More frequent update of status boards. Update were appropriate and timely.
- m. (Closed) IFI 83-48-09: Provide local status boards for information. Status boards were provided and maintained in the OSC area.
- n. (Open) IFI Bulletin 79-BU-18: Audibility problems encountered on evacuation of personnel from high-noise areas. Design changes have yet to be implemented.
- o. (Open) IFI 81-19-10: Inadequate temperature difference recorders. Design changes have yet to be implemented. Meteorological information on the process computer lags real time by approximately 30 minutes.
- p. (Open) IFI 81-19-35: Cross-reference EOI and emergency instructions in IPD. The project should be initiated in the spring of 1985 by evaluating the EOI's on the simulator. New procedures will be provided upon completion of the project.
- q. (Open) IFI 82-31-01: Document and establish schedules for testing or evaluatirg the PNS system. The licensee intends to use contractor assistance to evaluate the PNS against FEMA-43 criteria. Corrective action will follow the study recommendations.
- r. (Open) IFI 83-40-05: Interim PASS procedures inadequacies. The issue was passed to NRR following the 1983 routine inspection. No resolution has been provided.
- s. (Open) IFI 83-40-06: Followup on pamphlet distribution. No resolution has been made. The licensee continues to evaluate options.