



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

AUG 22 1988

Report Nos.: 50-327/88-33 and 50-328,88-33

Licensee: Tennessee Valley Authority
6N38 A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

Docket Nos.: 50-327 and 50-328

License Nos.: DPR-77 and DPR-79

Facility Name: Sequoyah Nuclear Plant

Inspection Conducted: July 11-15, 1988

Inspector: James L. Kreh 8-16-88
J. L. Kreh Date Signed

Approved by: Thomas R. Decker 8-16-88
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) notifications and communications, (3) shift staffing and augmentation, (4) training, and (5) dose assessment.

Results: One violation was identified: failure on February 8, 1988, to adequately implement procedure IP-1, "Emergency Plan Classification Logic" (see Paragraph 2 below for details). No deviations were identified. The findings of this inspection indicated that the licensee was adequately prepared to respond to an emergency at the Sequoyah Nuclear Plant. It was noted however, that there was no general oversight system in place to assure all required training was completed (see Paragraph 5 below for details).

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- T. Adkins, Program Manager (Corporate)
- D. Amos, Chemical Engineer
- J. Chenkus, Jr., Program Administrator (Corporate)
- S. Childers, Shift Operations Supervisor
- *M. Cooper, Compliance Licensing Supervisor
- D. George, Operations Duty Specialist (Corporate)
- T. Gullette, Lead Duty Officer (Corporate)
- *R. Kitts, Chief Emergency Preparedness Branch (Corporate)
- B. Lake, Supervisor, Licensing Training Section
- *B. Marks, Supervisor, Emergency Preparedness Branch (Corporate)
- *T. Noble, Project Engineer, Emergency Preparedness
- *D. Ormsby, Licensing Engineer
- *J. Patrick, Operations Superintendent
- J. Polehn, Health Physicist (Corporate)
- *E. Sliger, Manager of Projects
- *S. Smith, Plant Manager
- G. Stirling, Shift Technical Advisor
- W. Vanosdale, Shift Operations Supervisor
- D. Wall, Supervisor, Exercise Development and Emergency Facilities (Corporate)
- *T. Youngblood, Emergency Preparedness Program Manager

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

NRC Resident Inspector

- *P. Harmon

- *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 Appendix B to the licensee's Radiological Emergency Plan, this program area was inspected to determine whether the licensee used and understood a standard emergency classification and action level scheme.

The inspector reviewed the licensee's implementing procedure IP-1, entitled "Emergency Plan Classification Logic." The event classifications in the procedure were consistent with those required by regulation and the Radiological Emergency Plan (REP). The classification procedure did not appear to contain impediments or errors which could lead to incorrect or

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

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

The inspector discussed with licensee representatives the coordination of EALs with State and local officials. A letter dated July 5, 1988, from the Tennessee Emergency Management Agency confirmed that the State had reviewed and concurred in the EALs for the Sequoyah facility.

The responsibility and authority for classification of emergency events and initiation of emergency action were prescribed in licensee procedures and in the REP. 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. All personnel interviewed promptly and properly classified the hypothetical accident situations presented to them, and appeared to be familiar with appropriate classification procedures.

The inspector reviewed licensee records, including Control Room journals, pertaining to all emergency declarations at Sequoyah since January 1, 1988. The following is a listing of those events which resulted in implementation of the REP (each was classified as a Notification of Unusual Event):

<u>Date</u>	<u>Description of Event</u>
02/08/88	Seismic alarm received on annunciator panel 1-XA-55-15B
02/09/88	Identified reactor coolant system (RCS) leakage exceeding 10 gpm
02/29/83	Unidentified RCS leakage exceeding 1 gpm
04/02/88	Shutdown initiated upon expiration of LCO [limiting condition for operation] time limit
04/03/88	Pressurizer valve in safety-related system failed to close
04/06/88	Unidentified RCS leakage exceeding 1 gpm

The Shift Operations Supervisor's log for February 8, 1988 disclosed that the alarm indicating "SEISMOLOGICAL RECORDING INITIATED" (1-XA-55-15B, window 22) was received at 12:09 p.m., but a Notification of Unusual Event (NOUE) was not declared until 1:13 p.m. Receipt of the referenced alarm was specifically listed in procedure IP-1 (Revision 12, dated October 5, 1987) as an EAL associated with a NOUE classification. General direction was provided in Section 3.0 of IP-1, including the following:

"If there is any reason to doubt whether a given condition has actually occurred, the shift engineer or the Site Emergency Director will proceed with the required notification without waiting for formal confirmation. If followup investigations show that a suspected condition has not occurred, is less severe, or more severe than originally suspected, the classification will be cancelled, downgraded, or upgraded as required. "

Instead of immediately declaring the NOUE in accordance with the quoted instruction, licensee personnel consumed 64 minutes investigating and discussing the validity of the alarm, according to the Control Room log. The NOUE was finally declared after the seismic alarm was determined to have been spurious; this action was also not in accordance with the requirements of IP-1. Failure to implement procedure IP-1 in a timely manner during the referenced event was identified as a violation of Technical Specification 6.8.1.e.

Violation (327,328/88-33-01): Failure on February 8, 1988, to Adequately Implement Procedure IP-1, "Emergency Plan Classification Logic."

One violation and no deviations were identified.

3. Notifications and Communications (82203)

Pursuant to 10 CFR 50.47(b)(5) and (6); 10 CFR Part 50, Appendix E, Section IV.D; and Sections 5 and 6 of the REP, 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 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 management control program for the Alert and Notification System was reviewed. According to licensee documentation and discussions with licensee representatives, the system consisted of 35 fixed sirens and numerous mobile sirens. Maintenance of the system was provided by the licensee. The inspector reviewed siren test records for the period

October 1987 to June 1988. The records showed that a silent test was conducted biweekly, a growl test quarterly, and a full-cycle test monthly. The testing regime exceeded that specified in Appendix 3 to NUREG-0654. The licensee had completed installation of 72 new sirens intended to eliminate the need for mobile-siren routes in the 5- to 10-mile annulus. Full-scale preoperational testing of these units started in June 1988.

Communications equipment in the Control Room, Technical Support Center (TSC), and Central Emergency Control Center (CECC) 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 listed above were consistent with system descriptions in the REP and its implementing procedures.

The inspector reviewed licensee records for the period March-June 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.

4. Shift Staffing and Augmentation (82205)

Pursuant to 10 CFR 50.47(b)(2) and Section IV of Appendix E to 10 CFR Part 50, 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, menu-driven system which activated radio pagers via one transmitter onsite and several offsite. Weekly, unannounced tests of the APS were conducted, with variance in the day of the week (excluding Sunday) and the time of day (between 5:30 a.m. and 10:30 p.m.). 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 a study done in October 1987, to confirm that Table B-1 augmentation times could be met. The inspector reviewed records of the 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.

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

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

The inspector reviewed documentation of the emergency response training program, including training procedures and selected lesson plans, and interviewed members of the instructional staff. Based on these reviews and interviews, the inspector determined that the licensee had established a formal emergency training program.

The Emergency Preparedness Program Manager was directly responsible for providing required specialized initial training and annual retraining to Site Emergency Director designees and personnel assigned to staff the Technical Support Center and the Operations Support Center (training modules 1.2, 2.1, and 2.2, respectively). Use of a personal computer system was recently implemented to track the training of those personnel. The call lists contained in procedures IP-6 and IP-7 were updated quarterly against the computerized training roster. The inspector concluded that adequate management oversight existed with respect to the training of the TSC and OSC staff. Training of all other nonlicensed plant personnel with assigned roles in the emergency response organization was the responsibility of the various work groups to which those individuals belonged. The result of this arrangement was that licensee management did not exercise oversight to assure that all personnel with designated emergency response functions received the required training. This matter was discussed with licensee representatives during the course of the inspection and in the exit interview as well. The licensee had previously recognized that tracking of required training was not being accomplished satisfactorily and was in the process of considering alternatives for improvement in this area.

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, dose calculation, and protective action decision-making.

No violations or deviations were identified.

6. Dose Calculation and Assessment (82207)

Pursuant to 10 CFR 50.47(b)(9), this area was inspected to determine whether there was an adequate method for assessing the consequences of an actual or potential radiological release.

The inspector reviewed TI-30, a procedure for manually calculating release rates in the event the plant computer was not available. The calculated release rate, along with any actual measurements in the environs, would be used to determine the emergency classification in accordance with the EALs in IP-1. Dose projections would be performed at the CECC.

The inspector discussed the dose projection models used by the licensee and the State of Tennessee. The models used by the State and licensee were different under certain conditions. According to a licensee representative, the reasons for the differences, as well as their impact, were understood and taken into account during assessment activities.

The inspector requested and observed a dose assessment walk-through by an individual designated as responsible for dose projection at the CECC during an emergency. The individual demonstrated the ability to make such calculations using a computerized system, and was able to produce acceptable results within 10 minutes.

No violations or deviations were identified.

7. Action On Previous Inspection Findings (92702)

(OPEN) Violation 327,328/88-18-01: Failure to Provide Annual REP Retraining to a Member of the Emergency Response Organization. In the licensee's response of May 13, 1988, to the Notice of Violation, the root cause of the violation was identified as "a failure to verify that all designated emergency response personnel receive the required training." As indicated in Paragraph 5 above, the corrective steps taken by the licensee were not sufficiently comprehensive to provide for such verification.

8. Exit Interview

The inspection scope and results were summarized on July 15, 1988, with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. Licensee representatives expressed comments dissenting from this finding, while indicating that they intended to analyze it further. Although proprietary information was reviewed during this inspection, none is contained in this report.

Item Number

Description and Reference

327,328/88-23-01

Violation: Failure on February 8, 1988, to make an emergency declaration in a timely manner (Paragraph 2).

Licensee management was informed that a previous violation, discussed in Paragraph 7, would remain open because the corrective action to date did not fully address the root cause of the problem.