



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

JUL 09 1985

Report Nos.: 50-269/85-15, 50-270/85-15, and 50-287/85-15

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Docket Nos.: 50-269, 50-270, and 50-287

License Nos.: DPR-38, DPR-47, and
DPR-55

Facility Name: Oconee 1, 2, and 3

Inspection Conducted: June 17-20, 1985

Inspectors: *A. L. Cunningham*
A. L. Cunningham

07/05/85
Date Signed

for W. M. Sartor
W. M. Sartor

07/05/85
Date Signed

for M. R. Poston-Brown
M. R. Poston-Brown

07/05/85
Date Signed

Accompanying Personnel: E. A. King
T. P. Lynch
D. B. Stockton
W. V. Thomas

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

7/5/85
Date Signed

SUMMARY

Scope: This routine, announced inspection entailed 168 inspector-hours on site in the area of emergency preparedness exercise.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *M. Tuckman, Station Manager
- *T. Barr, Superintendent of Technical Services
- *R. Band, Compliance Engineer
- *R. E. Harris, System Emergency Planner
- *C. C. Jennings, Site Emergency Coordinator
- *C. Young, Radiation Protection Coordinator
- *R. Bowser, Shift Supervisor (HP)
- *J. E. Owens, Health Physicist
- *M. D. Wright, I&E Supervisor
- *D. Robinson, Shift Supervisor (HP)
- *M. Bolch, Catawba Emergency Preparedness Coordinator

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

NRC Resident Inspector

*J. Bryant

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 20, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. No dissenting comments were received from the licensee.

The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this exercise.

3. Licensee Action on Previous Enforcement Matters

No previous enforcement matters regarding emergency preparedness remained outstanding.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Exercise Scenario (82301)

The scenario for the emergency exercise was reviewed to assure that provisions were made to test the integrated capability and a major portion of the basic elements defined in the licensee's emergency plan and organization pursuant to 10 CFR 50.47(b)(14), paragraph IV.F of Appendix E to 10 CFR 50, and specific criteria defined in Section II.N of NUREG 0654, Revision 1.

The scenario was reviewed in advance of the scheduled exercise date and was discussed in detail with licensee representatives on June 18, 1985. While no major problems with the scenario were identified, some inconsistencies became apparent during the exercise. The inconsistencies, however, failed to detract from the overall performance of the licensee's emergency organization.

The scenario developed for this exercise was detailed, and fully exercised the onsite emergency organizations. The scenario also provided sufficient information to the State and local government agencies consistent with the scope of their participation in the exercise.

The licensee made a significant commitment to training and personnel through use of controllers, evaluators, and other required specialists participating in the exercise. The controllers appeared to provide adequate guidance throughout the exercise; however, prompting and frequent dialogue between controllers and players was observed by the inspectors and licensee observers. This finding was identified by the licensee during their controller/evaluator critique. The item was fully discussed by the group, and additional training regarding required interaction, and limits thereof, between controllers and players was assigned corrective action. This matter will be reviewed during a future exercise (85-15-01).

No violations or deviations were identified.

6. Drill Scenario (82301)

Scenarios for the fire and medical emergency drills were reviewed to assure that provisions were made to test specific functions in the licensee's emergency plan pursuant to 10 CFR 50.47(b)(14), paragraph IV.F of Appendix E to 10 CFR 50, and specific criteria defined in Section II.N of NUREG 0654.

The scenarios developed for the drills were detailed and adequately exercised the participating licensee organization and offsite local emergency agencies. The scenarios provided sufficient information to local support agencies consistent with the scope of their participation in the drills.

The licensee and offsite support agencies made a significant commitment to training and personnel by use of controllers, evaluators, and specialists participating in the drills. The controllers provided adequate guidance

throughout the drills. No significant problems were disclosed regarding the scenarios for the subject drills.

No violations or deviations were identified.

7. Assignment of Responsibility (82301)

This area was observed to assure that primary responsibilities for emergency response by the licensee were specifically established, and that adequate staff was available to respond to an emergency pursuant to 10 CFR 50.47(b)(1), paragraph IV.A of Appendix E to 10 CFR 50, and specific criteria defined in Section II.A of NUREG 0654, Revision 1.

The inspectors observed that specific emergency assignments were made for the licensee's emergency response organization, and that adequate staff was available to respond to the simulated emergency. The initial response organization was augmented by designated licensee representatives; however, because of the scenario scope and conditions, long term or continuous staffing of the emergency response organization was not required. Discussions with licensee representatives indicated that sufficient technical staff was available to provide for continuous staffing of the augmented emergency organization if needed.

The inspectors also observed the activation, staffing, and operation of the emergency organization in the TSC and OSC. At each response center, the required staffing and assignment of responsibility appeared to be consistent with the licensee's approved procedures.

No violations or deviations were identified.

8. Onsite Emergency Organization (82301)

The licensee's onsite emergency organization was observed to assure that the following requirements were implemented pursuant to 10 CFR 50.47(b)(2), paragraph IV.A of Appendix E to 10 CFR 50, and specific criteria promulgated in Section II.B of NUREG 0654, Revision 1: (1) responsibilities for emergency response were unambiguously defined; (2) adequate staffing was provided to assure initial facility accident response in key functional areas at all times; (3) onsite and offsite support organizational interactions were specified.

The inspectors observed that the initial onsite emergency organization was adequately defined and that staff was available to fill key functional positions within the emergency organization. Augmentation of the initial emergency response organization was accomplished through mobilization of off-shift personnel. The on-duty Shift Supervisor assumed the duties of Emergency Coordinator promptly upon initiation of the simulated emergency and directed the response until relieved by the Station Manager.

Required interactions between the licensee's emergency response organization and State and local support agencies were adequate and consistent with the scope of the exercise.

No violations or deviations were identified.

9. Emergency Response Support and Resources (82301)

This area was observed to assure that the following arrangements for requesting and effectively using assistance resources were made pursuant to 10 CFR 50.47(b)(3), paragraph IV.A of Appendix E to 10 CFR 50, and Section II.C of NUREG 0654, Revision 1, namely: (1) accommodation of State and local staff at the licensee's near-site Emergency Operations Facility; (2) organizations capable of augmenting the planned response were identified.

Licensee contact with offsite organizations was conducted in accordance with approved procedures and was consistent with the scope of the exercise. Assistance resources from State and local agencies were available to the licensee.

No violations or deviations were identified.

10. Emergency Classification System (83201)

This area was observed to assure that a standard emergency classification and action level scheme was in use by the licensee pursuant to 10 CFR 50.47(b)(4), paragraph IV.C of Appendix E to 10 CFR 50, and specific criteria promulgated in Section II.D of NUREG 0654, Revision 1.

An emergency action level matrix was used to promptly identify and properly classify the emergency and escalate to more severe emergency classifications as the simulated emergency progressed. Licensee actions in this area were considered adequate.

An inspector observed that the emergency classification system used was consistent with the Radiological Emergency Plan and Implementing Procedures. The system appeared to be adequate for classification of the simulated accident. The respective emergency procedures provided for initial and continuing mitigating actions during the simulated emergency.

No violations or deviations were identified.

11. Notification Methods and Procedures (82301)

This area was observed to assure that procedures were established for notification of State and local response organizations and emergency personnel by the licensee, and that the content of initial and followup messages to response organizations were established. This area was further observed to assure that means to provide early notification to the populace within the plume exposure pathway were established pursuant to

10 CFR 50.47(b)(5), paragraph IV.D of Appendix E to 10 CFR 50, and specific criteria defined in Section II.E of NUREG 0654, Revision 1.

An inspector observed that notification methods and procedures were established and available for use in providing information concerning the simulated emergency conditions to Federal, State, and local response organizations, and to alert the licensee's augmented emergency response organizations. Notification of the State of South Carolina and local offsite organizations was completed within 15 minutes following declaration of each emergency classification. The NRC was notified within one hour following declaration of each emergency classification.

Telephone notification of State and local response organizations was promptly followed by transmission of hard copies of the notification to those organizations. The copies included the recommended protective actions when necessary.

The prompt notification system (PNS) for alerting the public within the plume exposure pathway was in place; however, consistent with the scope of the exercise, this system was not actuated. The licensee is planning a full cycle test of the system in conjunction with State and local authorities later this summer.

No violations or deviations were identified.

12. Emergency Communications (82301)

This area was observed to assure that provisions existed for prompt communications among principal response organizations and emergency personnel pursuant to 10 CFR 50.47(b)(6), paragraph IV.E of Appendix E to 10 CFR 50, and specific criteria promulgated in Section II.F of NUREG 0654, Revision 1.

The inspector observed communications within and between the licensee's emergency response facilities (control room, TSC, OSC), between the licensee and offsite agencies, and between the offsite environmental monitoring teams and the TSC. The inspectors also observed information flow among various groups within the licensee's emergency organization. Emergency communications were adequate and consistent with the scope of the exercise.

No violations or deviations were identified.

13. Emergency Facilities and Equipment (82301)

This area was observed to assure that adequate emergency facilities and equipment to support an emergency response were provided and maintained pursuant to 10 CFR 50.47(b)(8), paragraph IV.E of Appendix E to 10 CFR 50, and specific criteria defined in Section II.H of NUREG 0654, Revision 1.

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

emergency use during the exercise. Emergency response facilities activated during the exercise included the control room, technical support center (TSC), and operations support center (OSC).

- a. Control Room - The inspector observed that reactor control room operations personnel acted promptly to initiate required responses to the simulated emergency. Emergency procedures were readily available, routinely followed, and factored into accident assessment and mitigation exercises.

Control Room personnel involvement was essentially limited to those personnel assigned routine and special operational duties. It was noted, however, that the number of controllers, evaluators and observers resulted in periodic overcrowding of the facility and significant increases in ambient noise level. This finding was identified by NRC and licensee observers. During the licensee controller/evaluator critique, the licensee recommended that the number of controllers and evaluators be reduced to preclude overcrowding and attending elevated ambient noise level.

The shift supervisor and control room operators were cognizant of their duties, responsibilities, and authorities. These personnel demonstrated an understanding of the emergency classification system and the proficient use of specific procedures to determine and declare the proper classification.

- b. Technical Support Center (TSC) - The TSC was activated and promptly staffed following notification by the Coordinator of the simulated emergency conditions leading to the Alert classification. The facility staff appeared to be knowledgeable concerning their emergency duties, authorities, and responsibilities, and the required operation appeared acceptable. This facility was provided with adequate equipment for support of the assigned staff. TSC security was promptly established.

Status boards were strategically located to facilitate viewing by the TSC staff. Status boards were updated as required to chronicle changes in plant status, accident assessment and mitigation throughout the exercise. The inspectors noted that a status board dedicated to trending of simulated plant systems and engineering data was maintained and updated during the accident sequence.

Security personnel were posted to limit and control access to the facility and preclude overcrowding. It was noted that the ambient noise level within the facility was very high. This condition was further aggravated by routine radio communications conducted between the TSC dose assessment group and the offsite monitoring teams. This item was identified and discussed during the licensee controller/evaluator critique and the presentation of findings during the exit critique. It was also noted, however, that high ambient noise level posed no impediment to normal conduct of TSC operation. The licensee

planned to review methods of ambient noise reduction within the facility.

- c. Operations Support Center (OSC) - The OSC was promptly staffed following activation of the emergency plan by the Emergency Coordinator. An inspector observed that teams were promptly assembled, briefed, and prepared for deployment. The OSC Supervisor appeared to be cognizant of his duties and responsibilities. The NRC inspectors and licensee observers noted, however, that improvements in the following areas were indicated, namely: routine briefing of OSC staff of plant status during the exercise; logging of status and location of OSC teams; frequency of updating OSC status boards; and location of OSC dose assessment group status boards. These items were discussed during the licensee controller/evaluator and exit critiques.

14. Accident Assessment (82301)

This area was observed to assure 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), paragraph IV.B of Appendix E to 10 CFR 50, and specific criteria promulgated in Section II.I of NUREG 0654, Revision 1.

The accident assessment program included an engineering assessment of plant status, and an assessment of radiological hazards to onsite and offsite personnel resulting from the accident. During the exercise, the engineering accident assessment team functioned adequately in analyzing the plant status to provide recommendations to the Site Emergency Manager concerning mitigating actions required to reduce damage to plant equipment, prevent releases of radioactive materials, and terminate the emergency condition.

Radiological assessment activities involved several groups. An inplant group was effective in estimating the radiological impact within the plant based on inplant monitoring and onsite measurements. Offsite radiological monitoring teams were dispatched to determine the level of radioactivity in those areas within the path of the plume. Radiological effluent data was received in the TSC. The offsite dose assessment and protection calculations were consistent with scenario values. It was observed however, that monitoring of the plume was inadequate. Offsite monitoring teams failed to define the plume centerline and determine plume dimensions. This item will be reviewed during future exercises (85-15-02).

Routine inventory and verification of the contents of monitoring kits issued to offsite radiation monitoring team personnel was conducted by each team member prior to deployment. Listing of required contents of each kit was provided. It was also noted that current procedures provided for quarterly inspection, inventory and operational check of equipment and instruments in each kit.

Use of the post-accident sample system (PASS) was not included in the scope of the exercise. Health physics coverage was provided for all aspects of the exercise and ALARA practices were employed.

No violations or deviations were identified.

15. Protective Response

This area was observed to determine that guidelines for protective actions, consistent with federal guidance, were developed and in place, and protective actions for emergency workers, including evacuation of non-essential personnel, were implemented promptly as required by 10 CFR 50.47(b)(10) and specific criteria promulgated in Section II.J of NUREG 0654, Revision 1.

The inspector observed the licensee's program for personnel accountability. The inspector noted that upon sounding of the site evacuation alarm, personnel appeared to proceed promptly to designated assembly points. Initial accountability appeared to be completed in about 20 minutes. Accountability was continued, however, until all personnel were accounted for. This test was completed approximately 30 minutes after initial accountability check.

The protective measures decision making process was observed by the inspectors. Recommendations implemented by the Control Room and TSC were timely, adequate and consistent with the above criteria. Protective measures recommendations were provided by the licensee to the State of South Carolina and local offsite organizations consistent with the scope of the exercise scenario.

No violations or deviations were identified.

16. Radiological Exposure Control (82301)

This area was observed to determine that methods for controlling radiological exposures in an emergency were established and implemented for emergency workers, and that such methods included exposure guidelines consistent with EPA recommendations as required by 10 CFR 50.47(b)(11), and specific criteria defined in Section II.K of NUREG 0654 Revision 1.

An inspector noted that the radiological exposures were controlled throughout the exercise by issuing supplemental dosimeters to emergency workers and by conducting periodic radiological surveys in the emergency response facilities. Exposure guidelines were in place for various categories of emergency actions, and adequate protective clothing and respiratory protection were available for use as required.

Health Physics control of radiation exposure, contamination control, and radiation area access appeared adequate. Health Physics supervisors were observed to brief survey teams adequately. Dosimetry was available and was used. High range dosimeters were available if needed. A communicator and

data logger were established at the health physics access point and appeared to function in a satisfactory manner.

No violations or deviations were identified.

17. Exercise Critique (82301)

The licensee's critique of the emergency exercise was observed to assure that shortcomings identified as part of the exercise were brought to the attention of management for corrective action, as required by 10 CFR 50.47(b)(14), 10 CFR 50, Appendix E, paragraph IV.F, and the specific criteria in NUREG 0654, Section II.N.

A formal critique was held on June 20, 1985, with exercise controllers and observers, licensee management, and NRC representatives. Weaknesses identified during the exercise and plans for corrective action were discussed. Licensee action on weaknesses identified will be reviewed during a subsequent inspection. Observation of the licensee controller/evaluator critique, held prior to the exit critique, was included as part of the exercise evaluation. Observation disclosed that the licensee conducted a detailed critique of the exercise and operation of the emergency response facilities. The critique included identification and discussion of weaknesses and required improvements, documentation thereof, and required corrective actions. All findings were summarized during the exit critique.

No violations or deviations were identified.

18. Inspector Followup (92701)

- a. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/82-08-04: Correct weaknesses identified in emergency communications. Observation of radio-communications between the OSC and offsite monitoring teams were adequate both in content and signal strength.
- b. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/82-08-08: Develop methods for estimating concentrations in containment or to relate containment activity to potential offsite exposure rates. Inspection confirmed that procedures were developed for offsite dose calculations and projections (AP/0/B/1000/07), and factoring of such results into the protective action decision making process.
- c. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/83-10-04: Maintaining a valid estimate of plant conditions during an emergency.
- d. (Closed) Inspection Followup Item (IFI) 50-269, 270, 287/83-10-06: Provide additional training for health physicists who do offsite monitoring. Inspection of training records confirmed that additional training of offsite monitoring personnel was completed to assure correct usage of monitoring equipment, retrieval of environmental samples, and attention to required monitoring of personnel dosimetry.

- e. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/83-27-02: Control room operator training on dose code. Inspection of respective training records confirmed that suggested training was implemented.
- f. (Closed) Inspector Followup Item IFI 50-269, 270, 287/83-27-03: Protective Action Guide Lifesaving dose changed to 75 rem. Review of procedures confirmed that the cited change was implemented (RP/O/B/1000/11).
- g. (Closed) Inspector Followup Item (IFI) 50-269/84-14-01, 50-270/84-16-01, 287/84-16-01. Planning for emergency worker protection. Procedural review confirmed that required planning was implemented.
- h. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/84-21-02: Recommend instead of "consider" in RP/O/B/1000/06. Inspection confirmed that above change was implemented and approved on April 30, 1985.
- i. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/84-21-03: Scope of audit of interfaces with State and local agencies. This item was reviewed and found to be adequate.
- j. (Closed) Inspector Followup Item (IFI) 50-269, 270, 287/84-21-01: Training emphasis on procedural formulation of protective action recommendations. Inspector reviewed licensee training packages. Review confirmed that required training was implemented.
- K. (Closed) IE Bulletin 80-BU-15; 50-270, 50-287: Loss of emergency notification system with loss of offsite power. The inspector reviewed licensee action on this matter. The inspector determined that the licensee had adequate provisions for dealing with this potential problem.