



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

MAR 26 1991

Report Nos.: 50-325/91-03 and 50-324/91-03

Licensee: Carolina Power and Light Company  
P. O. Box 1551  
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick Steam Electric Plant

Inspection Conducted: February 4-8 and March 4-6, 1991

Inspector:

*James L. Kreh*  
J. L. Kreh

*03-22-91*  
Date Signed

Accompanying Personnel: G. W. Salyers

Approved by:

*William H. Rankin*  
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Emergency Preparedness Section  
Radiological Protection and Emergency  
Preparedness Branch  
Division of Radiation Safety and Safeguards

*3/25/91*  
Date Signed

SUMMARY

Scope:

This routine, unannounced inspection was conducted in the area of emergency preparedness, and included review of the following programmatic elements: (1) Radiological Emergency Plan and its implementing procedures; (2) emergency facilities, equipment, instrumentation, and supplies; (3) organization and management control; (4) training; and (5) independent and internal reviews/audits.

Results:

In the area inspected, two violations were identified. The emergency preparedness program appeared to be receiving adequate management support. Except as identified in the report details, the emergency response facilities, equipment, and supplies were properly maintained. The requirements and commitments addressed by the emergency preparedness program were effectively managed by the licensee's staff. Records of program activities were maintained and readily auditable. Violations were identified for (1) failure to adequately maintain the emergency ventilation system for the building housing

the Technical Support Center and Emergency Operations Facility, and (2) failure to maintain the emergency training qualifications of some individuals (non-cited). The findings of this inspection indicated that the licensee was adequately prepared to respond to a radiological emergency at the Brunswick facility.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*B. Altman, Manager, Regulatory Compliance
- \*S. Callis, Onsite Representative Licensing
- #P. Dorosko, Supervisor, Auxiliary Systems Engineering
- \*M. Foss, Supervisor, Regulatory Compliance
- \*W. Hatcher, Supervisor, Security
- \*K. Harris, Senior Specialist, Regulatory Compliance
- \*R. Helme, Manager, Technical Support
- \*M. Highsmith, Regulatory Compliance
- \*B. Houston, Senior Specialist, Emergency Preparedness
- \*M. Jones, Manager, Nuclear Assessment Department
- \*S. Leonard, Manager, Training
- \*J. Moyer, Manager, Operations
- \*J. Spencer, General Manager
- \*R. Starkey, Jr., Site Vice President
- \*R. Warden, Manager, Maintenance

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

#### NRC Resident Inspectors

- W. Levis
- \*D. Nelson
- #R. Prevatte

\*Attended exit interview on February 8, 1991

#Participated in telephonic exit interview on March 6, 1991

### 2. Emergency Plan and Implementing Procedures (82701)

Pursuant to 10 CFR 50.47(b)(16), 10 CFR 50.54(q), and Appendix E to 10 CFR Part 50, this area was reviewed to determine whether changes were made to the program since the last routine inspection (February 1990), and to assess the impact of these changes on the overall state of emergency preparedness at the facility.

The inspector reviewed the licensee's program for making changes to the Radiological Emergency Plan (REP) and the Plant Emergency Procedures (PEPs). A review of selected licensee records confirmed that changes to the REP and PEPs since February 1990 were approved by management and submitted to the NRC within 30 days of the effective date, as required.

During the course of the review, it was noted that the Emergency Action Levels (EALs), which form the basis of the scheme for classifying plant emergencies, were not included in the REP except by reference to PEP-02.1, "Initial Emergency Actions." This was not in accordance with 10 CFR 50.47<sup>(b)</sup>, (4), a planning standard which states that an emergency response plan for a nuclear power reactor must specify a standard emergency classification and action level scheme. Because the NRC conducts formal reviews of each licensee's emergency plan (which forms the basis for the emergency response methodology) and all revisions thereto, but not the implementing procedures (which are intended to provide the means of implementing the detailed planning basis described in the plan), the "inclusion-by-reference" approach gives rise to the possibility of EAL changes being unreviewed by the NRC. This was brought to the licensee's attention and discussed in detail with plant and corporate representatives. On February 13, 1991, licensee representatives informed the inspector of a commitment to include the full details of the EAL scheme in the REP for both the Brunswick and H.B. Robinson plants before April 30, 1991.

The licensee has been performing augmentation drills for the Technical Support Center and Operational Support Center since February 1990 in response to a previously identified concern (tracked as Inspector Follow-up Item 89-31-03). The licensee had no formal program in place for the implementation and documentation of these drills. However, as a result of further discussions of this matter, the licensee committed to implement such a program.

Controlled copies of the REP and PEPs were audited in the Control Room (CR), Technical Support Center (TSC), and the Emergency Operations Facility (EOF). The selected documents that were examined were found to be a current revision.

Some minor discrepancies were noted in the Plan and Procedures. In reviewing the REP and the PEPs, it was observed that REP Section 3.3.4 listed 4 fire departments available for onsite support. However, no current letter of agreement with Sunny Point Military Terminal existed as stated in the REP. The Emergency Inventory Check List in PEP-4.6 for the TSC, EOF, and CR specifying the number of TLDs referenced procedure E-RC-494. This procedure has been canceled. The list of effective pages in the REP for Section 6 and 7 did not agree with the revision numbers on the individual pages of the associated section. The licensee was informed of these minor discrepancies during the course of the inspection, and agreed to implement appropriate corrective actions.

The inspector reviewed records of five emergency declarations made by the licensee since the inspection of February 1991. A Notification of Unusual

Event was declared on each of the following dates:

- \* March 22, 1990
- \* August 20, 1990
- \* September 27, 1990
- \* December 3, 1990
- \* January 17, 1991

Review of the classification procedure and conditions prompting the emergency declaration indicated in each case that the classification was made promptly and correctly.

The inspector reviewed documents verifying that the EALs were presented to and reviewed by the State. The State made no recommendations for EAL changes at that time.

No violations or deviations were identified.

3. Emergency Facilities, Equipment, Instrumentation, and Supplies (82701)

Pursuant to 10 CFR 50.47(b)(8) and (9), 10 CFR 50.54(q), and Section IV.E of Appendix E to 10 CFR Part 50, this area was inspected to determine whether the licensee's emergency response facilities (ERFs) and other essential emergency equipment, instrumentation, and supplies were maintained in a state of operational readiness, and to assess the impact of any changes in this area upon the emergency preparedness program.

The inspector toured the licensee's ERFs, including the CR, TSC, Operations Support Center (OSC), and EOF. Except as discussed below, the facilities and emergency equipment therein appeared to be maintained in an appropriate state of readiness. According to observations by the inspector and statements by licensee representatives, no significant changes in the ERFs were made since the last inspection. The inspector and licensee checked the inventory of the Emergency Kits located in the TSC and CR and found the inventory complete.

The inspector reviewed the licensee's documentation of required communications tests for the period of February 1990 to February 1991, including the following: (1) EOF communications system functional tests, performed biweekly; (2) monthly communications drills involving message transmission from the Control Room to the State Warning Point via the Automatic Ring-Down; and (3) tests of the Emergency Notification System (ENS). According to the records, prompt corrective actions were undertaken when equipment deficiencies were identified.

The Back-Up Communications System VHF radio (alternate communications for CR, TSC, EOF per PEP-02.6.21) was identified in a QA audit report as being deficient based on statements to auditors by a Brunswick County

representative (apparently under certain weather conditions the transmitting signal strength was not strong enough). The comment was not tracked or followed up by the Emergency Preparedness group. Further inquiry revealed that there was not a program in place for testing the VHF radio back-up communications system. The licensee was informed and committed to implement a testing program. This finding will be tracked as Inspector Follow-up Item (IFI) 50-325, 324/91-03-01.

The Early Warning Notification System (EWNS) consisted of 34 fixed sirens (29 in Brunswick County and 5 in New Hanover County). Testing was performed under the jurisdiction of the respective county emergency management agencies, with test results forwarded to the licensee. The test results were reviewed by the inspectors and indicated that all sirens met the acceptance criteria.

During a walkdown of the TSC and EOF (which share a common building), the inspector identified problems with the emergency ventilation system for those ERFs. The TSC/EOF building was initially occupied in October 1983, was activated during Hurricane Diana in September 1984, and has been used since 1985 during annual exercises and responses to actual emergencies. While observing a simulated startup of the emergency ventilation system for the TSC and EOF, it was noted that identification tags for dampers and components were missing. Further inspection revealed that the system had disconnected dampers, and copper moisture drain lines from the instrument/control air system were smashed closed at floor level, preventing automatic or manual draining if needed. No procedures for maintenance or periodic functional testing were in place for the TSC/EOF ventilation system. Upon questioning the engineer responsible for the ventilation system, it was revealed that the original building work package had not been completed. Plant Emergency Procedure PEP-04.2, "Emergency Facilities and Equipment", specified that "Emergency facilities and equipment shall be maintained and kept operational." PEP-04.2 designates the TSC and EOF as emergency facilities. The emergency ventilation system for the TSC/EOF building had not been properly maintained nor was a maintenance program in place since occupancy in 1983. At the time of the onsite exit interview on February 8, 1991, the licensee could not provide assurance that the subject system (1) was constructed in accordance with the design criteria, (2) could perform properly relative to the acceptance criteria contained in applicable design and procurement documents, and (3) would provide a radiologically habitable environment for EOF and TSC personnel during an accident involving an airborne release of radioactive material. Subsequent to the onsite phase of the inspection, the licensee committed to provide to the NRC, by March 1, 1991, an Engineering Evaluation Report (EER) documenting the basis for operability of the TSC/EOF emergency ventilation system as well as the completion of any additional testing that might be necessary. The EER, provided to the NRC in accordance with the stated commitment,

concluded that the system in question was operable and could maintain the required positive pressure in the TSC/EOF building so as to limit the infiltration of potential contaminated outside air in the event of a radiological release. With the issue of system operability thus resolved, the inspector informed licensee representatives during a telephonic conference on March 6, 1991 that failure to conduct adequate maintenance/surveillance as described above was a violation of the requirements of PEP-04.2.

Violation 50-324, 325/91-03-02: Failure to adequately maintain the emergency ventilation system for the TSC and EOF.

One violation and no deviations were identified.

#### 4. Organization and Management Control (82701)

Pursuant to 10 CFR 50.47(b)(1) and (16) and Section IV.A of Appendix E to 10 CFR Part 50, this area was inspected to determine the effects of any changes in the licensee's emergency response organization and/or management control systems on the emergency preparedness program and to verify that such changes were properly factored into the REP and PEPs.

Questions concerning county organization and management changes involving the emergency preparedness program were reviewed and discussed with licensee representatives. There were no county changes identified. The inspector discussed the site relationship, in emergency preparedness, with the Emergency Service Coordinator for Brunswick County. The relationship was described as open and responsive. No problem areas were identified by the offsite local official.

The organization and management of the emergency preparedness program were reviewed and discussed with licensee representatives. Minor management organizational changes in these aspects of the program had occurred since February 1990. These did not change nor affect the licensee ability to respond.

The inspector reviewed the Radiological Emergency Plan Section 6 methodology for program maintenance. The performance of a variety of required activities, including testing of communication systems, training for licensee and offsite emergency response personnel, periodic shift augmentation drills (periodicity unspecified), and other program maintenance activities were reviewed. Documentation of these activities was maintained. Records were reviewed in the following areas:

- \* Emergency Communications Test
- \* Early Warning System Siren Activation Monitoring
- \* Emergency Plan Augmentation Callout
- \* Emergency Plan Radiation Instruments and Emergency Kit Inspection and Checks

All of the required records indicated satisfactory maintenance of the emergency preparedness program.

No violations or deviations were identified.

#### 5. Independent and Internal Reviews/Audits (82701)

Pursuant to 10 CFR 50.47(b)(14) and (16) and 10 CFR 50.54(t), this area was inspected to determine whether the licensee had performed an independent review or audit of the emergency preparedness program, and whether the licensee had a corrective action system for deficiencies and weaknesses identified during exercise and drills.

The most recent independent audit of the program (Report No. QAA/0021-90-02 dated 9/26/90) was conducted by Carolina Power and Light Quality Assurance Department. The audit was a composite audit involving 22 different subjects, one of which was emergency preparedness. The inspector's review of the subject audit report indicated that the licensee had conducted an evaluation of:

- \* Notification/Activation
- \* Accident Assessment Activities
- \* Emergency Facilities and Equipment
- \* Radiological Controls
- \* Recovery
- \* Augmentation Drills
- \* Emergency Classification
- \* Onsite Emergency Organization
- \* External Interface

A copy of the appropriate section of the audit was reviewed by the inspectors and found satisfactory.

The licensee's program for follow-up on findings from audits, drills, and exercises was reviewed. The licensee had established a computer-based system called Emergency Preparedness Items Listing as a tool for managing the follow-up actions required for deficient areas of the program. The QA department specified which deficiencies or bullets identified in a audit report were significant enough to require a response. If QA did not require a response by the EP Group, the items were not placed on the EP Action Item list (e.g., the Back-Up Communication System VHF radio, discussed in Paragraph 3, above). The tracking of all audit report items was discussed with the licensee EP Group as a potential program improvement.

No violations or deviations were identified.

#### 6. Training (82701)

Pursuant to 10 CFR 50.47(b)(2) and (15), and Section IV.F of Appendix E to 10 CFR Part 50, this area was inspected to determine whether the

licensee's key emergency response personnel were properly trained and understood their emergency responsibilities.

Licensed Operators were not interviewed to determine their use of the EAL Flow Charts and ability to classify an event. This waiver was based on comments from the NRC Operator Licensing Section stating that event classification is a critical element in the examination process and that classification was not identified as a weakness in the last requalification examination.

Two of nineteen randomly selected ERO training qualifications reviewed were delinquent. Presently, a contact scheduler for each group was responsible for tracking the training of individuals. The system had potential for errors if the assigned contact scheduler was on extended leave, as occurred in one case above. This potential problem was also identified by the licensee's Emergency Plan Training Meeting held January 16, 1991. The meeting resolution for lapses in training qualifications was to identify an "Action Plan to be developed in February". Since all criteria as specified in 10 CFR Part 2, Appendix C, Section V of the NRC Enforcement Policy were satisfied, the licensee was informed that this finding was considered a noncited violation (NCV).

(Closed) NCV 50-324, 325/91-03-03: Failure to maintain ERO qualifications current.

One NCV and no deviations were identified.

#### 7. Action on Previous Inspection Findings (92701)

(Closed) Inspector Follow-up Item (IFI) 50-324, 325/89-31-03: Conduct an unannounced augmentation drill to verify that NUREG-0654 Table B-1 staffing and arrival times can be met.

Unannounced staffing drill response documents provided by the licensee were reviewed and the results were satisfactory. This particular issue is considered closed, but a related concern was disclosed during the review of this item and is discussed in Paragraph 2.

#### 8. Exit Interview

The inspection scope and results were summarized on February 8, 1991 with those persons indicated in Paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results listed below. Although propriety information was reviewed during this inspection, none is contained in this report. Licensee management was informed that one previous IFI was reviewed and closed, as discussed in Paragraph 7.

The second item listed below was tentatively identified during the exit interview as a deviation from licensee commitments. However, review and discussion by Region II management and staff subsequent to the onsite inspection determined that this matter represented a violation, as discussed above in Paragraph 3. Licensee management representatives were telephonically informed of this determination on March 6, 1991.

<u>Item Number</u>	<u>Category, Description, and Reference</u>
50-324, 325/91-03-01	IFI: Implementing a program for testing Back-Up Communications System VHF radio (Paragraph 3)
50-324, 325/91-03-02	NOV: Failure to adequately maintain the emergency ventilation system for the Technical Support Center and Emergency Operations Center (Paragraph 3)
50-324, 325/91-03-03	NCV: Failure to maintain emergency training qualifications. (Paragraph 6)