



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

Report No.: 50-325/78-26, 50-324/78-26

Docket No.: 50-325 and 50-324

License No.: DPR-71 and DPR-62

Licensee: Carolina Power and Light Company

Facility Name: Brunswick Units 1 and 2

Inspection at: Brunswick Site, Southport, North Carolina

Inspection Conducted: October 16-20, 1978

Inspector-In-Charge: D. J. Perrotti

Reviewed by:

J. W. Hufham
J. W. Hufham, Chief
Environmental and Special Projects
Section
Fuel Facility and Materials Safety
Branch

11-16-78
Date

Inspection Summary

Inspection on October 16-20, 1978 (Report No. 50-325/78-26 and 50-324/78-26):

Areas Inspected: A routine unannounced inspection to determine the adequacy and effectiveness of the licensee's emergency organization, emergency facilities, equipment and procedures, emergency tests and drills, main control room environmental system, fire brigade organization and training, means for determining a radioactive release, emergency training, and follow-up on previously identified items. The inspection involved 34 inspector-hours on-site by one NRC inspector.

Results: Of the eight areas inspected, no items of noncompliance were found in seven areas; one apparent item of noncompliance (infraction - failure to adhere to Emergency Plan and Fire Protection Program Implementing Procedures, paragraphs 5.b and 10.b) was found in one area.

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DETAILS I

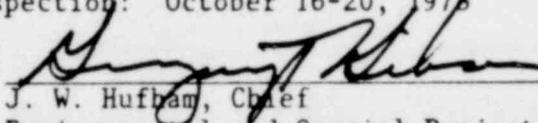
Prepared by:


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Dates of Inspection: October 16-20, 1978

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1. Persons Contacted

A. Carolina Power and Light Company Personnel

- *A. C. Tollison, Jr., Plant Manager
- *K. E. Enzor, Administrative Supervisor
- *L. F. Tripp, Acting Supervisor, Environmental and
Radiation Control
- *L. A. Rogers, NRC Coordinator
- *J. L. McKnight, RC and T Foreman
- *R. E. Porterfield, Plant Fire Chief
- *W. M. Tucker, Superintendent, Technical and
Administrative
- *E. H. Norwood, Training Coordinator
- *S. E. Thorndyke, Operating Supervisor
- J. Kiser, Radiation Protection Engineer
- D. Smiley, RC and T Engineering Technician
- J. Cook, RC and T Foreman
- A. Hezler, Shift Foreman, Operations
- R. Creech, Foreman, Instrument and Control
- D. Cooper, Shift Specialist
- M. McLeod, Siting Unit, Raleigh, North Carolina
- B. McFeaters, Siting Unit, Raleigh, North Carolina
- T. Bancroft, Safety Representative, Division Office,
Wilmington, North Carolina

B. Other Individuals Contacted

- Dr. G. A. Wallin, Medical Consultant
- Dr. J. R. Forstner, Medical Consultant

D. Ledgett, Chief, Southport Rescue Squad
K. Toler, Administrative Services, Doshier Memorial Hospital
J. Sutherland, Chief, Sunny Point MOT Fire Department
R. Jones, Deputy Fire Marshall, Sunny Point MOT Fire Department

*Denotes those present at the Exit Meeting.

2. Licensee Action on Previous Inspection Findings

(Closed) Unresolved Item 50-325, 324/78-02-01:
First Aid Training of Radiation Control and
Test Personnel.

First aid training for RC&T personnel has been completed. This matter is closed (paragraph 7.d).

3. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether they are acceptable items, items of noncompliance, or deviations. There were no unresolved items disclosed during the inspection.

4. Coordination with Off-Site Agencies

- a. Appendix E to 10 CFR 50, Section IV, paragraphs D, F, G and I specify that the emergency plans shall contain agreements and arrangements reached with local, state and federal officials and agencies; arrangements for transportation to and treatment of individuals at treatment facilities outside the site boundary; provisions for testing, by periodic drills, of radiation emergency plans to assure that employees of the licensee are familiar with their specific duties, to include provisions for participation in the drills by other persons whose assistance may be needed. Section 6.10 of the Technical Specifications states that a Facility Emergency Plan shall be established, implemented and maintained that meets or exceeds the provisions of Appendix E to 10 CFR 50.34.
- b. The inspector discussed, with licensee representatives and with the representatives of off-site agencies identified in paragraph 1, the coordination of the Brunswick emergency planning effort with off-site support groups. These discussions verified that the licensee had maintained good contact with the agencies involved. The inspector reviewed the letters of agreement with the principal off-site agencies, and noted that all letters had been renewed since August 11, 1977. The inspector met with representatives of the Doshier Memorial

Hospital and Southport Rescue Squad on October 17, 1977, and verified through discussions and observations that the medical facilities and transportation were available as described in the emergency plan. The inspector also verified, through discussion, that training had been provided for one doctor at Oak Ridge in March 1978, and for the Southport rescue squad and hospital staff on January 12, 1978.

c. There were no items of noncompliance or deviations.

5. Facilities, Equipment and Procedures

a. Changes in Facilities, Equipment and Procedures

The inspector reviewed changes to the facilities, equipment, and the Emergency Plan including Revision 8 dated July 5, 1978. The changes did not alter the initial requirements of the emergency plan and did not constitute an unreviewed safety question, nor a change in the Technical Specifications.

b. Emergency Kits

(1) Sections 6.1, 6.2 and 9.5 of the Emergency Plan describe the on-site emergency control center (control room), off-site emergency control center (Visitor's Information Center), and the medical facility at Doshier Hospital and specify that certain emergency supplies and equipment will be maintained at the three locations. Technical Specification 6.8.1.e states that written procedures shall be established, implemented and maintained covering emergencies. Radiation Control and Test (RC&T) Instruction 7014, "RC&T Emergency Actions for Site Evacuation", contains instructions for a complete annual inventory of each emergency kit and specifies certain items (radios and batteries, emergency breathing equipment) to be checked monthly.

(2) The inspector verified through discussions with licensee representatives and review of inventory records that the annual inventory and monthly checks had been completed during the period August 1977 to September 1978, with one exception. A cardex file used to record the monthly check-off indicated that the monthly checks, as specified by RC&T Instruction 7014, had not been performed during September 1977 at Doshier Hospital, and in April 1978 for Kit #3 at the plant site. The inspector interviewed the RC&T technician who had performed the last inventory in order to discuss an apparent missing item at the control

room kit. The inspector was informed that a battery operated air sampler had been replaced with an electric motor driven sampler, but that an old inventory form had been used to conduct the inventory. The inspector pointed out the need for using up-to-date forms in conducting the inventories. The inspector was informed that the scheduling of the emergency kit inventory and monthly checks were going to be put into a computer program, which would provide assurance that schedules are met. The inspector had no further comments.

- (3) The inspector defined the missed monthly checks as noncompliance with Technical Specification 6.8.1.e as implemented by Section 2.2.2 of RC&T Instruction 7014 (50-325,324/78-26-01).

c. Respiratory Equipment

- (1) Section 6.12.2, paragraph b.4 of the Technical Specifications requires, in part, written procedures to assure proper maintenance, storage and inspection of respiratory protection equipment.
- (2) The inspector reviewed RC&T Instruction 7017, Respiratory Program, which covers inspection maintenance and storage of the self-contained breathing apparatus (SCBA). The inspector verified, by observation, that SCBA's were available in the main control room as required by the emergency plan.
- (3) There were no items of noncompliance or deviations.

d. Main Control Room Isolation System

- (1) Section 6.1 of the Emergency Plan states that the control room is designed for continuous occupancy under all conditions and specifies a supply of food and water adequate for thirty days to be maintained. Technical Specification 4.7.2.a requires a 15 minute operability test each month on the control building HVAC systems. Technical Specification 4.3.5.5 requires a monthly test of the control building chlorine detection system.
- (2) The inspector verified, by observation, that food and water supplies were available in the control room. The inspector reviewed periodic tests PT 23.1 and PT 46.3 P, which verified that the HVAC operability tests and chlorine detector tests, respectively, had been completed for the period January to September 1978. The inspector asked

about testing of the radiation, smoke and heat detectors in the control room air intake ducts. The inspector was informed by a licensee representative that the requirement for testing, once per cycle, of the smoke, fire and high radiation auto isolation of the control room HVAC system became effective in January 1978, and that the test would be covered under PT 21.1E. The inspector stated that PT 21.1E would be reviewed during a subsequent inspection.

(3) There were no items of noncompliance or deviations.

e. Emergency Lighting

- (1) Section 10.17.2 of the FSAR states that the DC emergency lighting system is inspected and tested periodically to assure proper operation of auto transfer.
- (2) The inspector discussed emergency lighting with licensee representatives from various maintenance departments. The inspector was informed that there was no scheduled testing of the plant's emergency lighting system; however, the inspector was furnished a memorandum which indicated that a periodic test procedure was scheduled to be written for the test. At the exit interview, the inspector discussed this matter with licensee management representatives. The plant manager stated that a PT would be written and implemented by the end of the next Unit 1 refueling outage, scheduled for May 1979. The inspector stated that this would be followed during subsequent inspections.
- (3) There were no items of noncompliance or deviations.

f. Communications

- (1) Section 11 of the Emergency Plan specifies certain communication systems are provided to assure reliable communications during normal and emergency situations. Section 4.4 of the Emergency Plan specifies all site evacuation alarms will be tested at least monthly. Section 4.1 of Administrative Procedure AP 4.0, "Conduct of Operations", requires a periodic test of the fire, site, and building evacuation alarms.
- (2) The inspector verified, through observation and usage, that the communication systems described in the emergency plan were available and operable. The inspector reviewed Unit 2 Control Operator Weekly Check List which verified

that the testing of the fire, site evacuation and building evacuation alarms had been conducted weekly during the period September 1977 to September 1978.

(3) There were no items of noncompliance or deviations.

g. Remote Shutdown Panel

The Emergency Plan states that the Emergency Plan provides for information necessary for coping with any emergency situation which might arise at the Brunswick Steam Electric Plant. The inspector asked about a remote shutdown panel that would be needed to safely shut down the plant from outside the control room. The inspector was informed by licensee representatives that a remote shutdown panel was provided for each unit and that certain monitors on the panels were calibrated quarterly. The inspector verified, by review of surveillance records, that the quarterly calibration on the Drywell Pressure Loop, Reactor Pressure Loop and Reactor Vessel Level Loop had been conducted under periodic tests PT 55.1 PC, PT 55.2 PC and PT 55.3 PC, respectively, for the period January to September 1978. The inspector also observed the remote shutdown panel for Unit 1, and noted that the emergency instruction EI-29, Plant Shutdown From Outside the Control Room, was out of date. This matter was discussed during the exit interview. A licensee management representative stated that the panel would be entered on the distribution list, and in this manner an up-to-date copy of EI-29 would be maintained at the panel. The inspector had no further comments.

h. First Aid Room, Decontamination Facilities and Medical Arrangements

- (1) Section 9.1 of the Emergency Plan describes a first aid room (supplied with medical equipment and supplies) that would be used for treatment of contaminated personnel, whose injuries would not require immediate hospitalization, by medical personnel called to the site. Section 8 also specifies that complete decontamination facilities are included in the change room area of the service building.
- (2) The inspector verified, by observation, that the first aid room and decontamination facilities and supplies were available as described in the Emergency Plan.
- (3) There were no items of noncompliance or deviations.

6. Means For Determining the Magnitude of a Release

10 CFR 50, Appendix E, Section IV.C requires the Emergency Plan to provide for the means of determining the magnitude of a release of radioactive materials, including criteria for determining the need for notification and participation of local and state agencies.

a. Area and Process Radiation Monitoring Instruments

- (1) Section 6.1 of the Emergency Plan states that certain instrumentation is available in the control room to give early warning of a potential emergency and provides for continuing evaluation of the emergency. Environmental Technical Specifications 3.5.1.f and 3.5.2.d require that liquid and gaseous effluent monitors, respectively, shall be calibrated at least monthly. CP&L letter NG-76-1207, dated September 13, 1976, commits to a monthly source response check of the area radiation monitors.
- (2) The inspector verified the readouts of the following radiation monitors were operable by observing the indicator/recorders in the control room:

Condenser Offgas, Units 1 and 2
Main Stack
Reactor Building Vent, Units 1 and 2
Turbine Building Vent
Control Room Area Monitor
Control Building Air Intake Duct

The monthly source response check of the area radiation monitors was verified by an inspector during a previous inspection (IE Rpt. No. 50-325/78-23, 50-324/78-23). The calibration and functional testing of the liquid and gaseous effluent monitors were verified by an inspector during a previous inspection (IE Rpt. No. 50-325,324/78-5).

- (3) There were no items of noncompliance or deviations.

b. Meteorological Instrumentation

- (1) Section 6.1 of the Emergency Plan specifies that plant instrumentation is available in the control room for continuing evaluation of the emergency situation. Emergency instruction EI 27.3, Abnormal Release of Gaseous Radiation, requires wind speed, direction and differential temperature to properly estimate the magnitude of the release of airborne radioactive materials.

- (2) The inspector observed the control room printout for ambient temperature, upper and lower wind speed and direction, and the Pasquill stability factor to verify the equipment was operable. The inspector was informed that testing and calibration was done by the Siting Unit, located in Raleigh, North Carolina. The inspector contacted licensee representatives at the Siting Unit. The inspector was informed that the meteorological system is tested semi-annually and calibrated annually. The inspector reviewed surveillance records which verified that the testing and calibration had been completed in accordance with existing procedures and schedules.
- (3) There were no items of noncompliance or deviations.

c. Seismic Monitoring System

- (1) Technical Specification Table 4.3.5.1-1 requires an operability test of the seismic monitoring system each month, and calibration every eighteen months.
- (2) The inspector observed the seismic instrumentation in the control room, consisting of the on-line readout, strong motion accelerator and reader unit, and reviewed UA 28, 64 Seismic Event Annunciator Instruction. The inspector reviewed PT 25.2 P, Triaxial Time-History Accelerographs Channel Check, which verified that the monthly checks had been performed during the period January to September 1978. A licensee representative stated that the calibration of the seismic instrumentation would be due during the next refueling outage. The inspector had no further comments.
- (3) There were no items of noncompliance or deviations.

7. Emergency Plan Training

10 CFR 50, Appendix E, Section IV.H specifies that the Emergency Plan have provisions for training of employees of the licensee who are assigned specific authority and responsibility in the event of an emergency, and of other persons whose assistance may be needed in the event of a radiation emergency.

a. Emergency Coordinator Training

- (1) Section 2.2 of the Emergency Plan defines the line of succession for the Emergency Coordinator. Section 15.1 of the Emergency Plan requires instructions that emphasize individual responsibilities and duties.

- (2) The inspector discussed the Emergency Coordinator training with a licensee representative. The inspector was informed that all individuals who may succeed to the position of Emergency Coordinator listed in Section 2.2 of the Emergency Plan are either licensed or are members of the Plant Nuclear Safety Committee (PNSC), and, as such, are required to review, at least annually, the Emergency Plan and Procedures. Review of the Emergency Plan and Procedures is covered in paragraph 8.a. In addition, all the permanently assigned personnel receive annual refresher training in the Emergency Plan. This matter was discussed during the exit interview. A licensee management representative agreed that adequate training should be assured for those personnel who may succeed to the position of Emergency Coordinator, especially those personnel who do not hold an operator's license. The inspector had no further comments.
- (3) The requirement for the training of the Emergency Coordinator appeared to be adequately satisfied.

b. General Employee Training

- (1) Section 2.2 of training instruction TI-300, requires annual refresher training for all employees.
- (2) The inspector reviewed the course content for the training of general employees and a student handout covering emergency instructions. The inspector verified, by review of training records, that personnel received emergency plan training on November 23, 1977, with make-up sessions for those who missed the two initial sessions. The inspector was informed by the training coordinator that training for 1978 had not been completed as yet.
- (3) The requirement for the training of general employees appeared to be adequately satisfied.

c. Operator Training

- (1) The inspector discussed operator training with the training coordinator. The inspector was informed that the licensed operators are required to review the emergency plan and procedures as part of the licensee requalification program. The inspector reviewed selected licensed operators records which verified the emergency plan and procedure refresher training had been completed.

d. Emergency Monitoring Team (Including First Aid Training)

Section 2.5 of the Emergency Plan states that the Emergency Monitoring Team consists of members of RC&T and other plant personnel who have received training, and are qualified in health physics. The inspector discussed emergency plan training for members of the Emergency Monitoring Team with licensee representatives. The inspector was informed that all members receive annual refresher training and, in addition, training in all emergency procedures as part of their health physics qualification. An inspector verified the qualification of the RC&T personnel in health physics during a previous inspection (IE Rpt. 50-325,324/77-20). The inspector verified, by record review and discussion with a licensee representative from the CP&L Division Safety Office, that the RC&T personnel received first aid training during 1978. This training assures at least one first aid trained person is on-site at all times.

The requirement for the training of the Emergency Monitoring Team and first aid training appeared to be adequately satisfied.

e. Outside Agencies

- (1) Section 15.2 of the Emergency Plan states that a review of the Emergency Plan will be held once per year for interested outside agencies.
- (2) The inspector verified, by review of a drill critique and discussions with representatives of the licensee and outside agencies identified in paragraph 1, that six principal off-site support agencies were represented at a briefing held on January 13, 1978, at the Brunswick Plant site.
- (3) The requirement for the annual briefing for outside support agencies appeared to be adequately satisfied.

f. Contractor/Visitors

- (1) Section 15.1 of the Emergency Plan states that all new personnel having a work assignment at the Brunswick Plant will be given instructions in the plant site evacuation plan.
- (2) The inspector discussed contractor/visitor training in the evacuation plan with the training coordinator. The inspector was informed that these personnel are either trained for unescorted entry into the protected area, or

are provided with an escort who has received special training. The inspector reviewed the quiz that must be successfully completed for unescorted entry, and verified that it contained questions on site evacuation.

- (3) The requirement for training of contractor/visitors appeared to be adequately satisfied.

8. Review, Updating and Distribution of the Emergency Plan and Procedures

a. Review of Emergency Plan by the Plant Manager and PNSC

- (1) Section 15.4 of the Emergency Plan requires an annual review of the complete Emergency Plan and Implementing Procedures by the Plant Manager and the PNSC. Technical Specification 6.5.1.7.i requires a review of the Emergency Plan and Procedures by the PNSC.
- (2) The inspector reviewed the minutes of PNSC meeting number 78-83, which verified the Emergency Plan had been reviewed on September 28, 1978. The inspector asked about the review of procedures by the PNSC. The inspector was informed that the procedure review is accomplished by the PNSC; however, the detailed review is performed under the cognizance of the responsible supervisor. The proposed change to the procedure then requires approval by the PNSC prior to implementation. A review of the latest revision dates on the "emergency type" instructions showed that all of the instructions had been updated within the past two years.
- (3) The requirements of the Technical Specifications and the Emergency Plan, regarding the review of the Emergency Plan and procedures, appeared to be adequately satisfied.

b. Audit of Emergency Plan by Off-Site QA Group

- (1) Technical Specification 6.5.3.1.e requires an audit of the Emergency Plan to be conducted every two years by an independent off-site QA group.
- (2) The inspector verified, by record review and discussion with a licensee representative from the off-site QA group, that an audit of the Emergency Instructions had been conducted during February 1977, under Audit number QAA/216. The inspector was informed that the audit of the Brunswick Emergency Plan was scheduled for November 1978.

(3) There were no items of noncompliance or deviations.

c. Distribution of the Emergency Plan

(1) Section 15.2 of the Emergency Plan defines the off-site agencies to which a copy of the Emergency Plan will be distributed.

(2) The inspector reviewed document distribution records which indicated six off-site agencies had received the Emergency Plan. The inspector verified, by observation, that one on-site and two off-site groups had the current revision to the Emergency Plan available for use.

(3) The distribution of revisions to the Emergency Plan appeared to be adequately satisfied.

9. Emergency Drills

a. Section 15 of the Emergency Plan requires an annual, unannounced drill, including advance notification to off-site agencies requesting their participation.

b. The inspector reviewed a critique memo of the drill held on January 12, 1978, and discussed the follow-up actions to the areas of concern that were identified during the drill by the observers. The inspector verified, through discussions with licensee representatives, that all identified discrepancies were either corrected or were being looked into.

c. The requirements for the annual emergency drill appeared to be adequately satisfied.

10. Fire Protection/Prevention

a. Fire Brigade Organization

(1) Technical Specification 6.2.2.f requires that at least five members of the fire brigade be on-site at all times, in addition to the minimum operator crew necessary to safely shut down the plant in the event of an emergency.

(2) The inspector discussed the shift requirements of the fire brigade (members from Operations, Security and RC&T) with the Plant Fire Chief and the Training Coordinator. The inspector was informed that normally there would be more than the minimum five fire brigade members present. The inspector obtained shift rosters from Operations,

Security and RC&T, and compared these schedules with the fire brigade roster in order to verify the Technical Specifications were being met. The inspector verified that the swing shift on October 14 and 15, 1978, had at least five fire brigade members.

(3) There were no items of noncompliance or deviations.

b. Fire Brigade Training

(1) Technical Specification 6.8.1 states that written procedures shall be established, implemented and maintained covering emergencies. Section III.C of procedure FP-1 requires quarterly training sessions for all members of the fire brigade.

(2) The inspector discussed the various types of training provided the fire brigade during the first three quarters of 1978. The inspector reviewed a total of 28 fire brigade training records from Operations, Security and RC&T which indicated that 21 of 28 members had not attended training during the first quarter of 1978, and that 13 of 28 and 6 of 28 had not attended the training for the second and third quarters of 1978, respectively. This matter was discussed with licensee management representatives during the exit interview. Licensee management representatives acknowledged the inspector's remarks and stated that a greater effort would be made to satisfy this requirement.

(3) This matter was identified by the inspector as noncompliance with Technical Specification 6.8.1 as implemented by Section III.C of procedure FP-1 (50-325,324/78-26-01).

11. Review of Licensee's Response to IE Bulletin 77-08, "Locking Systems"

(a) IE Bulletin 77-08 requires the licensee, in part, to survey the facility and facility plans as to whether or not prompt emergency ingress into electrically locked safety-related areas by essential personnel could be assured during loss of power, and if unimpeded emergency egress from all parts of the facility could be assured with respect to hardware and security system installations. In addition, the licensee was required to review existing emergency plans and procedures to assure that prompt emergency ingress and unimpeded emergency egress was fully and effectively addressed for any postulated occurrence.

A written report was required for any facility that did not meet the requirements of action items 1 and 2 of the bulletin.

- (b) The inspector discussed this matter with a licensee representative. The inspector was informed that the licensee had received the bulletin, reviewed the facility locking systems and had determined that no response to the NRC was necessary. The inspector verified, by observation of several locking systems, that the doors within the protected area were key operated doors except for the security controlled entrance and exit doors. The inspector was informed that a manual override on these doors would assure emergency egress or ingress. In addition, personnel could evacuate through a padlocked gate, if necessary. The inspector asked for documentation that would verify a review of the facility and emergency plan and procedures had been accomplished as required by Bulletin 77-08. A licensee management representative stated that the matter would be looked into. The inspector had no further comments.

12. Exit Interview

The inspector met with licensee representatives (denoted in paragraph 1) at the conclusion of the inspection on October 20, 1978. The inspector summarized the purpose and scope of the inspection and findings.