UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-324/81-23, 50-325/81-23

Licensee: Carolina Power & Light Company
411 Fayetteville Street
Raleigh, North Carolina 27602

Facility Name: Brunswick

Docket Nos. 50-324, 50-325

License Nos. DPR-62 (Unit 2), DPR-71 (Unit 1)

Inspection at Brunswick site near Southport, North Carolina

Inspector: T E Conlon for 9-29-81
W. H. Miller, Jr. Date Signed

Accompanying Personnel: T. E. Conlon

Approved by: T E Conlon 9-29-81
T. E. Conlon, Section Chief Date Signed
Engineering Inspection Branch
Engineering and Technical Inspection Division

SUMMARY

Inspection on September 14-18, 1981

Areas Inspected

This routine, unannounced inspection involved 48 inspector-hours on site in the areas of fire protection/prevention.

Results

Of the areas inspected, four violations were found (Inadequate fire brigade training and drills - Paragraph 5.b(2); all personnel required to use respirator protection were not properly trained - Paragraph 5.b(2); inadequate number of spare cylinders available for fire brigade self contained breathing apparatus - Paragraph 5.b(3); and inspection of fire barrier penetrations not completed within the time specified by the Technical Specification - Paragraph 5.c.(9). No deviations were found.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*C. R. Dietz, Plant Manager
*E. A. Bishop, Engineering Supervisor
*C. S. Bohanan, Principal Specialist - Regulatory Compliance
*R. M. Poulk, Specialist - Regulatory Compliance
*E. H. Norwood, Senior Specialist - Training
*R. E. Porterfield, Senior Specialist - Fire Protection
*K. H. Stewart, Fire Protection Specialist
*T. L. Sarner, Technical Aide - Fire Protection
L. Rothman, Electrical Engineer
A. Ludlum, Specialist - Radiation Control
L. Tripp, Supervisor - Radiation Control

Other Organizations

W. F. Boscoe, United Engineers - Electrical Engineer
C. Walker, United Engineers - Fire Protection
D. K. Harbent, United Engineers - Mechanical Engineer

NRC Resident Inspector

*D. F. Johnson
*L. W. Garner

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on September 18, 1981 with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

a. (Closed) Violation Item (324/80-10-01 and 325/80-11-01) - Inadequate surveillance procedures for fire protection system: Procedures have been provided for all of the fire protection systems. This item is closed.

b. (Closed) Violation Item (324/80-10-02 and 325/80-11-02) - Inadequate review of fire protection Technical Specification violations: The licensee has taken action to assure that personnel are aware as to the importance of meeting the requirements of the Technical Specifications. This item is closed.

c. (Closed) Deviation Item (324/80-10-03 and 325/80-11-03) - Inadequate water flow alarms for standby gas treatment deluge valves: The control valves to the deluge valves and alarm device are locked in the correct alignment and the alarm devices can be tested by conducting an operational test of the deluge valve. This item is closed.

d. (Open) Unresolved Item (324/80-10-04 and 325/80-11-04) - Storage of training and surveillance inspection/test records: All of the training records for the fire brigade prior to 1981 were sent to the permanent record vault on May 29, 1981. A nonconformance item was also identified in this area by the licensee during operations QA/QC surveillance S-81-005. The licensee is reviewing the present record storage procedures to determine the action required to resolve this nonconformance which will also resolve this unresolved item. This item remains open and will be reviewed during a subsequent NRC inspection.

e. (Closed) Violation Item (325/79-39-01) - Failure to place isolation section of diesel generator fire protection system under limiting condition of operations: The licensee has taken action to assure that personnel are aware of the importance of meeting the requirements of the Technical Specifications. This item is closed.

f. (Closed) Deviation Item (324/79-28-01 and 325/79-29-01) - Failure to implement adequate fire protection procedures: Procedures have been provided for the fire protection systems and for fire fighting strategies. This item is closed.

g. (Closed) Inspector Followup Item (324/79-28-03 and 325/79-29-03) - Improper fire damper installation for computer rooms: The fire dampers for these rooms have been properly reinstalled. This item is closed.

h. (Closed) Deviation Item (324/79-28-06 and 325/79-29-06) - Substandard fire protection sprinkler systems: The sprinkler systems have been modified to meet the essential provisions of the National Fire Protection Association Standard 13 (NFPA-13), Sprinkler Systems. This item is closed.

i. (Closed) Unresolved Item (324/79-28-07 and 325/79-29-07) - Licensee's evaluation of the fire protection foam system: The licensee has modified these systems to meet the essential provision of NFPA-13, Sprinkler Systems, and NFPA-16, Form Water Sprinkler and Spray Systems. This item is closed.

j. (Closed) Deviation Item (324/79-28-08 and 325/79-29-08) - Improper water system sectional control valve (Valve 31): Supplement No. 2 to the Fire Protection Safety Evaluation Report dated June 11, 1980 found that the arrangement of the valve was acceptable. This item is closed.

k. (Closed) Deviation Item (324/79-28-09 and 325/79-29-09) - Failure to provide air compressor for self contained breathing apparatus: The air compressor has been provided. This item is closed.

l. (Closed) Violation Item (325/79-29-14) - Inoperative sprinkler system for Unit 1 reactor building: The licensee has taken action to assure that personnel are aware of the importance of meeting the requirements of the Technical Specifications. All of the system control valves are maintained locked in the correct alignment. This item is closed.

m. (Closed) Unresolved Item (324/79-28-15 and 325/79-29-15) - Electrical classification for recombiner rooms of AOG Building. Practically the entire AOG Building is being modified with some new equipment being provided for the building. The licensee stated that when this modification is completed the electrical installation will meet the criteria for the hazards involved. This item is no longer applicable and is therefore closed.

n. (Closed) Unresolved Item (324/79-17-08 and 325/79-17-08) - Combustible scaffolding. The licensee's procedure FP-2, Control of Combustible Materials and Ignition Sources has been revised to prohibit the use of combustible wood within the plant. This item is closed.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. New unresolved items identified during this inspection are discussed in paragraph 5.d.

5. Fire Protection/Prevention Program

a. Administrative Procedures

The inspector reviewed the following licensee's fire protection (FP) procedures:

(1) FP-1, Plant Fire Brigades (Revision 3)
(2) FP-2, Control of Combustible Materials & Ignition Sources (Revision 2)
(3) FP-3, Reporting Deficiencies
(4) FP-4, Periodic Test Procedures
(5) FP-5, Welding and Burning Control (Revision 1)
(6) FP-6, Storage and Use of Hazardous Materials
(7) General Fire Plan
(8) Fire Barrier Penetration Seal Work Controls

These procedures were found to comply with the NRC guidelines in the document entitled "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls and Quality Assurance" dated June 14, 1977, except for those items previously identified by licensee's letter of September 20, 1977.

b. Fire Brigade

(1) Organization

The plant fire brigade is composed of personnel from the Operations, Chemistry and Fire Support Departments. The inspector reviewed the Fire Brigade Personnel Roster and September 1981 shift schedule and noted that sufficient personnel should be on duty to meet the provisions of the Technical Specifications for fire brigade operations and for plant operation.

(2) Training and Drills

The inspector reviewed the training records for 11 shift foremen (fire team leaders) and 16 fire brigade members and found that six of the fire team leaders and four brigade members had not completed the initial fire brigade training required by procedure FP-1, Plant Fire Brigades, Section III.B. This item is identified as Violation Item (324/81-23-01 and 325/81-23-01), Inadequate fire brigade drills and training.

The records of plant fire brigade drills were not stored as training records nor as QA records. However, the licensee was able to locate sufficient data to indicate the number and type of fire brigade drills conducted since 1978. These records indicated that in 1979 five drills were conducted. Four of these were conducted during the second quarter and one drill was conducted in the fourth quarter. In 1980 a total of four drills were conducted. One drill was conducted during the first quarter and three drills were conducted in the fourth quarter. In 1981 the only drill conducted was held in conjunction with the recent site emergency drill. The licensee's procedure FP-1, Plant Fire Brigade, Section III.C.1 states that drills will be conducted on a required basis, with a minimum of one drill to be conducted per quarter. The failure to conduct at least one fire brigade drill per quarter in 1979 through 1981 is identified as another example of Violation Item (324/81-23-01 and 324/81-23-01), Inadequate fire brigade drills and training. The failure to properly maintain records of fire brigade drills is another example of Unresolved Item (324/80-10-04 and 325/80-11-04) as outlined in above Paragraph 3.d.

A sample of the records of the annual physical examinations for the brigade member required by FP-1 Section IV were reviewed and found satisfactory. However, while reviewing these records it was noted that of the records for 10 shift formen (fire team leaders) and 13 fire brigade members which were reviewed 5 of the shift foremen and 4 of the brigade members were not currently respirator qualified in accordance with the licensee's Radiation Control and Test Procedure RC&T-0220, Volume VIII. This procedure requires all individuals who are required to use respiratory protection to be retrained annually which consists of an annual physical, classroom training and field testings. In general, the unqualified personnel had not received the classroom training or had not completed the field testing. This is identified as Violation Item (324/81-23-02 and 325/81-23-02). All personnel required to use respirator protection are not adequately trained.

(3) Fire Brigade Equipment

A sufficient quantity of turnout gear (coats, booths, helmets) is provided to equip 14 fire brigade members. This gear is stored in the two fire equipment houses and adjacent to the control room. Additional fire fighting equipment such as fire hose, nozzles, handlights, portable exhaust fans, radios and self contained breathing apparatus is also stored in the main fire equipment house. This equipment appeared to be adequately maintained.

Presently, the fire brigade is assigned 16 self contained breathing apparatus and 32 spare air cylinders. However, only 14 of the 32 spare cylinders were found to be serviceable. Eighteen cylinders were out of service due to minor maintenance discrepancies such as leaking valves and due to the lack of an up-to-date hydrostatic pressure test. CP&L's Fire Protection Program Review of January 1, 1977, Section IV.C.3.d.4, and NRC's Fire Protection Safety Evaluation Report (FPSER) of November 22, 1977, Sections 3.1.23 and 4.4.3, state that a total of 16 self contained breathing apparatus and 32 spare cylinders will be provided to support the manual fire fighting activities. Operating license for Units 1 and 2 Paragraphs 2.B(6) and 2.B(7), respectively, state that the licensee is required to complete the modifications identified in Paragraphs 3.1.1 through 3.1.35 of NRC's FPSER prior to Units 1's return to operation for Cycle 2 and prior to Units 2's return to operation for Cycle 3. These dates were April 12, 1979 and May 15, 1979, respectively. Although, the licensee previously provided the required number of self contained breathing apparatus and spare cylinders, the failure to maintain the equipment in service is considered a failure to meet the stipulations of the license and is identified as Violation Item (324/81-23-03 and 325/81-23-03), Inadequate number of spare cylinders available for fire brigade self contained breathing apparatus.

The licensee has the capability to refill the self contained breathing apparatus cyliners by means of an air compressor and cascade system. An additional cascade system is available in the Radiation Control Department for use if needed. Also, a total of 26 self contained breathing apparatus and 12 spare cylinders are available within the Radiation Control Department for use in the event of an emergency.

c. Inspection and Test of Fire Protection Systems

The inspector reviewed the following surveillance inspection and test records for the dates indicated. The record data was satisfactory except where noted:

(1) PT-35.1, Fire Protection Systems (Weekly):

January through August 1981. Pressure maintenance pump P-4 has been out of service since October 1980. However, this pump is not required to be operational by the Technical Specifications.

(2) PT-35.3, HPCI Carbon Dioxide System (Semiannual):

January 30, 1980 through January 30, 1981. Test scheduled for July 28, 1981 was completed but data was not yet filed.

(3) PT-35.4, Fire Detection Systems - Reactor Buildings, Diesel Generator Building, Service Water Building, Water Treatment Building, Control Building and AOG Building (Semiannual):

February 1980 through June 1981

(4) PT-35.17, Fire Detection System (unsupervised circuit tests) (Monthly):

January 28, 1981 through August 10, 1981

(5) PT-35.12.2 Diesel Generator Deluge System (Annual):

PT-35.12.8, Makeup Water Treatment Building Sprinkler System (Annual):

PT-35.12.9, Service Water Intake Structure Sprinkler System (Annual):

PT-35.12.10, Radewaste Building Sprinkler System (Annual):

PT-35.11.1, Unit 1 Reactor Building Sprinkler System (Annual):

PT-35.11.2, Unit 2 Reactor Building Sprinkler System (Annual):

The first tests conducted on these sytems following the functional tests conducted by the Construction Group were conducted by the plant during April and May 1981. Test data is presently being reviewed by the plant staff and was not on file in the records vault.

(6) PT-35.11.1, Hose Rack Inspection (Monthly):

December 16, 1980 thorugh May 28, 1981. Inspection record data for the March 1981 inspection was not available. However, the schedule data sheets indicate that these systems were inspected and tested during the week of March 23, 1981. This item is not considered a violation. The licensee is trying to locate this missing data.

(7) PT-35.11.2, Hose Rack Surveillance (18 Months):

March 11, 1980.

(8) PT-35.10 Control Building Carbon Dioxide System (Semiannual):

May 29, 1980 through June 2, 1981.

(9) PT-35.16.1 through 35.16.13 Fire Barrier Penetrations (18 months):

BUILDING	DATE
Unit 1 Reactor Building	Not Complete
Unit 2 Reactor Building	March 19, 1981
Service Water Intake Structure	November 17, 1980
Control Building - 23'	July 8, 1981
Control Building - 49' & 70'	Not Complete
Control Room Cabinets - West	March 18, 1981
Control Room Cabinets - East	March 18, 1981
Control Room Computer Rooms	Not Complete
Diesel Generator Building 2' & 50'	December 23, 1980
Diesel Generator Building 23'	Not Complete
AOG Building	Not Complete

A visual inspection of the fire barrier penetrations was completed on June 5, 1979. Technical Specification Section 4.7.8.a requires the the fire barrier penetrations to be verified functional by a visual inspection at least once per 18 months. The next inspection following the June 1979 inspection should have been conducted prior to April 25, 1981 (550 days + 25% = 688 days). The surveillance on Unit 1 Reactor Building, portions of Control Building, AOG Building and portions of

the diesel generator building were not completed prior to April 25, 1981. This is identified as Violation Item (324/81-23-04 and 325/81-23-04), Inspection of fire barrier penetrations not completed within the time specified by the Technical Specifications. The licensee was to include this item in LER 1-81-60.

d. Plant Tour

A tour of the plant was made by the inspector. All of the fire protection systems required by the Technical Specification were inspected and verified to be in service. Hydrant hose house Nos. 9, 10 and 14 were inspected. The equipment stored in these houses appeared adequate and well maintained.

In the service water building the inspector found portions of the fire/flame barriers removed from conventional service water pump 1A and nuclear service water pumps 1B and 2A. These barriers are required by the licensee's Fire Protection Program Review of January 1, 1977 Section IV.C.2.C and by NRC's FPSER Sections 3.1.9 and 5.7. The licensee stated that NRR had advised that these fire barriers were no longer required since an automatic sprinkler system had been installed above these pumps. However, documentation could not be located to verify this position. This item is identified as Unresolved Item (324/81-23-05 and 325/81-23-05), Fire/flame barrier requirements for service water pumps, and will be reviewed during a subsequent NRC inspection.

Within the area inspected, except as noted above, no additional violations or deviations were identified.

6. Fire Protection Modification Commitments - Redundant Cables

The licensee has performed a detailed evaluation to determine where cabling from redundant safe shutdown divisions were routed in close proximity to each other and which could be involved in a single fire. This evaluation is included in report entitled "Analysis of Safe Shutdown Capability," Books 1 and 2 dated October 28, 1977. This analysis also listed a number of modifications which were to be provided to correct situations where redundant cables could be involved in a single fire. The inspector reviewed the following modifications and found no discrepancies. The item numbers correspond to the item numbers in the analysis report

ITEM NOS.	CABLE/CONDUIT NOS.	MODIFICATION	NOTES
II.D.2.6	1LY1/CB	Sprinkler & Barrier	(1)
II.D.2.8	2IA1/BB	Barrier	(1)
II.D.2.37	6IB1/BB	Sprinkler & Barrier	(1)

II.D.3.29	4AI1/DA	Sprinkler & Barrier	(1)
II.D.3.57	9IC2/BA	Sprinkler & Barrier	(1)
II.D.3.65	9MH3/BA	Sprinkler & Barrier	(1)
II.D.3.69	9NQ1/BB	Barrier	(1)
III.D.2.3	AK9-XNO/4	Isolation Switch	(1)
	JU3-XNO/E	Add Cable	(2)
	JU3-KC3	Spare Cable	(2)
III.D.2.7	BU6-JU2, JA5-JU-2	Isolation Switch	(1) & (2)
III.D.2.9	B30-W46, GL3-W46	Reroute cables	(2)
III.D.2.26	DR-7-JK-2, JC4-JK/Q		
	JK2-JK3/P	Isolation Switch	(2)
III.D.3.1	AG8-JU5/3	Isolation Switch	(2)
	KC3-XNO	Add Cable	(2)
	JU5-KC4	Spare Cable	(2)
III.D.3.8	B36-JF8 & JF8-Jh1/N	Isolation Switch	(1) & (2)
III.D.3.36	GL6-HC2	Reroute Cable	(2)
III.D.3.56	IG6-JFO, JFO-RS4	Spare	(2)
	IG6-RS4, IG6-RS4/1	Add Cable	(2)

Notes: Modifications were verified as follows:

(1) Visual inspection
(2) Review of "as built" drawings, cable pull slips and computer conduit and cable schedule book (CASP)

Within the areas examined no violations or deviations were identified.