



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

Report Nos.: 50-325/84-37 and 50-324/84-37

Licensee: Carolina Power and Light Company
411 Fayetteville Street
Raleigh, NC 27602

Docket Nos.: 50-325 and 50-324

License Nos.: DPR-71 and DPR-62

Facility Name: Brunswick 1 and 2

Inspection Conducted: December 10-13, 1984

Inspector: *Gerald R. Wiseman* 1/14/85
G. R. Wiseman Date Signed

Approved by: *T. E. Conlon* 1-14-85
T. E. Conlon, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 34 inspector-hours on site in the area of fire protection.

Results: No violations or deviations were identified.

8503080337 850114
PDR ADOCK 05000324
Q PDR

REPORT DETAILS

1. Licensee Employees Contacted

- *J. W. Chase, Manager Operations
- *J. D. Wilcox, Principal Engineer Operations
- T. L. Sarnier, Fire Drill Training Specialist
- A. Spencer, Training Specialist
- P. W. Howe, Vice President Brunswick Nuclear Project
- *R. E. Porterfield, Fire Protection Engineer

Other Organizations

- *R. E. Deacy, Fire Protection Engineer, Impell Corporation
- D. Quick, Supervisor Fire Protection Improvement Program, Management Analysis Company (M.A.C.)
- C. Brown, Fire Watch, Yergin Construction Company (Y.C.C.)

NRC Resident Inspector

- *D. O. Myers

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 13, 1984, with those persons indicated in paragraph 1 above. The licensee was informed of the inspection findings listed below:

- a. Inspector Followup Item (324/84-37-01 and 325/84-37-01), Surveillance Testing For 8-hour Battery Powered Emergency Lighting Units - paragraph 5.c.(7).
- b. Unresolved Item (324/84-37-02 and 325/84-37-02), Surveillance Requirements of the Fire/Flame Impingement Barrier for Fire Pumps - paragraph 6.a.
- c. Inspector Followup Item (324/84-37-03 and 325/84-37-03), Re-evaluation of Cable Spreading Rooms Sprinkler System Design - paragraph 6.b.

3. Licensee Action on Previous Enforcement Matters

- a. (Open) Unresolved Item (324/81-23-05 and 325/81-23-05), Fire/Flame Barrier Requirements for Service Water Pumps.

In a response to Region II, NRC addressing this item forwarded by letter dated November 5, 1981, the licensee committed to forward

documentation concerning the barriers for the service water pumps to NRR for concurrence by December 31, 1981. CP&L provided this documentation in a letter to NRR dated December 22, 1981; and requested formal concurrence that the service water pump barriers were not necessary. NRC/NRR responded to the request by letter to Mr. J. A. Jones of CP&L dated February 1, 1982.

The NRR letter stated that the requirement for fire barriers, such as the ones in question, is set forth by Section III.G of Appendix R to 10 CFR Part 50; therefore, the requirements for fire barriers remain in effect and must be complied with, unless the licensee requests and receives an exemption from the applicable requirements of Section III.G of Appendix R to 10 CFR Part 50. On April 24, 1984 the licensee submitted to NRC/NRR for their review the Alternative Shutdown Capability Assessment (ASCA) Report for the Brunswick Steam Electric Plant Units 1 and 2. The report was submitted in resolution of the requirements of 10 CFR 50.48 and 10 CFR 50 Appendix R. This item remains open pending NRR's review and issuance of an SER on the Appendix R submittal.

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 6.

5. Fire Protection/Prevention Program (64703)

a. Administrative Procedures

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

- (1) FP-01, Plant Fire Brigade (Revision 8, 2/9/84)
- (2) FP-02, Control of Combustible Materials and Ignition Sources (Revision 8, 9/19/84)
- (3) FP-04, Periodic Testing Schedule, (Revision 3, 1/18/84)
- (4) FP-05, Welding and Burning Control, (Revision 6, 4/25/84)
- (5) FP-07, General Fire Plan, (Revision 7, 11/9/83)
- (6) FP-08, Fire Barrier Seal Work Control, (Revision 7, 11/9/83)
- (7) FP-10, Fire Suppression System Valve Control, (Revision 4, 3/9/83)
- (8) FP-13, Operation of Respiratory Air Compressor Group, (Revision 2, 10/5/83)

- (9) FP-19, Brunswick Electric Steam Plant Fire Watch Procedure, (Revision 4, 5/16/84)

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.

b. Fire Brigade

- (1) The plant fire brigade is composed of six shifts of fully dedicated fire brigade personnel, with a minimum of five designated as fire brigade members on each shift. The inspector reviewed the fire brigade shift personnel roster and verified that at least five qualified fire brigade members were on duty.

(2) Training and Drills

The inspector reviewed the training records for six fire brigade members from the six shifts and verified that these members had received initial fire brigade training, respirator training, and that each shift had completed at least two brigade drills per quarter in 1984. The training and drills appear to conform to the provisions of Procedure FP-01.

(3) Fire Brigade Equipment

A sufficient quantity of turnout gear and self-contained breathing apparatus is provided to equip 14 fire brigade members.

This gear is stored in the two (north/south) fire equipment houses and adjacent to the main control room. The fire brigade is assigned 16 self-contained breathing apparatus and 68 spare air cylinders. This equipment appeared to be adequately maintained and serviced.

Additional fire fighting equipment such as fire hose, nozzles, portable exhaust fans, portable AFFF foam units, radios and spare air cylinders are stored in the south fire equipment house.

The licensee has the capability to refill the breathing apparatus air cylinders by means of an air compressor and cascade group located in the south fire equipment house. The inspector reviewed the operating and maintenance logs for the air compressor recharging group and verified that the system is operated and maintained in conformance to station procedure FP-13, Operation of Respiratory Air Compressor Group.

The inspector witnessed an announced on-site fire brigade drill, number 013, held by simulating a fuel oil fire in the 225,000 gallon fuel oil storage tank. Within seven minutes, dressed out

members of the fire brigade had arrived, a command post established and off-site assistance requested by the fire brigade leader; and hose lines and foam lines laid out.

The response time and actions taken by the fire brigade were considered satisfactory. A critique session was held after the drill.

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 were satisfactory except where noted:

- (1) PT 35.5.1, Fire Extinguisher Inspection (Monthly)
June through November 1984
- (2) PT 35.11.1, Hose Rack Inspection (Monthly)
June 1984 through November 1984
- (3) PT 35.14, Inspection of Self-Contained Breathing Apparatus,
(Monthly)
June 1984 to November 1984
- (4) PT 35.15, Fire Protection Fire Pump Flow Test (Annual)
July 15, 1983 and July 19, 1984
- (5) PT 35.16.11 Fire Barrier Penetration Seals, Diesel Generator
Building (18 months)
July 1983 and October 1984
- (6) PT 35.18.2 Swinging Fire Doors (Monthly)
May 1984 through November 1984
- (7) PT 35.21.1 Emergency Lighting System (Annual)

This procedure provides for surveillance of the 8-hour battery powered emergency lighting units for the plant. The inspector's review of this procedure revealed that the scope of testing does not include verification for 8-hour battery capacity or lighting head position. The licensee has identified these items in their Fire Protection Improvement Program and is presently rewriting the procedure. This is identified as Inspector Followup Item (324/84-37-01 and 325/84-37-01), Surveillance Testing for 8-hour Battery Powered Emergency Lighting Units, and will be reviewed during a subsequent NRC inspection.

d. Fire Protection Audits

The report audit dated November 27, 1984, of a Periodic Property Loss Prevention Inspection conducted by Nuclear Mutual Limited, on October 2 and 3, 1984, was examined. No major deficiencies were

identified in the report. A corporate quality assurance audit of the plant operations was conducted on June 18-22, 1984 by the CP&L Corporate QA Department and a Fire Protection Consultant of United Energy Services Company. Three fire protection deficiencies were identified in the report dated July 18, 1984, File QAA/21-23, and corrective action was taken by CP&L where required.

Within the areas examined there were no violations or deviations identified.

6. Fire Protection/Prevention Program Implementation (64704)

a. Plant Tours

The inspectors made a tour of the plant to verify that the licensee was implementing a program for fire protection and prevention that was in conformance with the site procedures, NRC requirements, commitments to the NRC and applicable industry standards. As a whole, the general housekeeping throughout the plant site was very good and considered above normal for a plant with one unit in outage and the other unit restarting from a long outage. No improper storage of combustible or flammable materials, liquids or gases and no unsafe welding and cutting operations or other activities involving open flame ignition sources was identified. However, several minor items which needed improvement were identified for the radiation controlled areas of the reactor buildings. These included the quantity and location of combustible materials associated with the Health Physics checkpoint stations on elevation 20-foot of the reactor buildings. The licensee is to review these items and take appropriate action. This will be further evaluated during a subsequent NRC inspection.

The inspector observed several fire watch patrols in the Reactor Buildings, Service Water Pump Structure, and Cable Spreading Rooms. The fire watches appeared attentive and knowledgeable of their required duties.

The inspector examined the construction of a partial height barrier installed between the electric fire pump and the diesel driven fire pump and controller. These pumps are located in the fully sprinkled water treatment building. The barrier consists of a 6" high concrete curb and a 9' high steel plate partition coated on both sides with "thermo-lag" material of a thickness to provide 1½-hour fire protection. A Class "A" fire door and frame are included in the partition barrier to provide access/egress to the diesel driven fire pump. The partition flame/fire barrier is designed to prevent flame impingement between the fire pumps and associated controllers. This barrier and fire door, however, are not included within the scope of the present plant surveillance procedures. The licensee has identified these items under their Fire Protection Improvement Program for Brunswick Plant. This item is identified as Unresolved Item (324/84-37-02 and 325/84-37-02), Surveillance Requirements of the

Fire/Flame Impingement Barrier for Fire Pumps, pending full implementation of the Fire Protection Improvement Program For Brunswick in accordance with the licensee's commitments for completion of the program.

The following fire protection systems were inspected and were found in service: two fire pumps, water storage tank for fire service, sprinkler systems for the service water intake structure and water treatment building.

Fire hydrant equipment houses Nos. 5, 6 and 9 were inspected and found to contain adequate equipment which appeared to be properly stored and maintained.

b. Fire Protection Modifications

The licensee is presently installing a manual on-off sprinkler system in the Units 1 and 2 cable spreading rooms for compliance to Appendix R commitments. It appears that the sprinkler installation does not conform to the provisions of National Fire Protection Association Standard 13, Sprinkler Systems, due principally to the location of the sprinkler heads relative to the floor and the installation of water baffle shields on heat collectors around some sprinkler heads. These modifications may adversely affect water coverage and water density for sprinkler protection from an exposure fire in the area. The inspector's concern was identified to the licensee who is to re-evaluate the sprinkler system design for water coverage and density. This is identified as Inspector Followup Item (324/84-37-03 and 325/84-37-03), Re-evaluation of Cable Spreading Rooms Sprinkler System Design, and will be reviewed during a subsequent NRC inspection.

Within the areas examined there were no violations or deviations identified.