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

Report No.: 50-400/89-07

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

Docket No.: 50-400 License No.: NPF-63

Facility Name: Harris 1

Inspection Conducted: March 27-31, 1989

Inspector: David Ward for 4/19/89
J. P. Harris Date Signed

Approved by: MR Wisenan 4/19/89
for T. Conlon, Section Chief Date Signed
Plant Systems Section
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was conducted in the areas of fire protection/prevention and follow-up on previously identified inspections items.

Results: In the areas inspected, violations or deviations were not identified.

During this inspection, the licensee was very cooperative in providing the inspector with applicable procedures, records and walkdown inspection of fire protection equipment and response to previously identified items. No weaknesses were identified during this inspection.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*C. S. Bohanan, Operations Support
*J. M. Collins, Manager, Operations
*C. S. Hinnant, Plant Manager
*J. Hammond, Director - ONS
*J. Nobles, Fire Protection, OPS Technician
*A. Pullian, Senior Specialist, QA
*R. Richey, Site Manager
*M. Stokes, Senior Specialist - Fire Protection
*D. Tibbits, Director, Regulatory Compliance
*M. Wallace, Senior Specialist, Regulatory Compliance

Other licensee employees contacted during this inspection included craftsmen, engineers, operators, mechanics, security force members, technicians, and administrative personnel.

NRC Resident Inspectors

*W. H. Bradford

*Attended exit interview

2. Fire Protection/Prevention Program (64704)

a. Fire Prevention/Administrative Control Procedures

The inspector reviewed the following fire prevention/administrative procedures:

Procedure No.	Title
FPP-01 Revision 7	Fire Protection Conduct of Operations
FPP-02 Revision 4	Fire Emergency
FPP-03 Revision 2	Fire Investigation Report
FPP-04 Revision 4	Control of Transient Combustibles
FPP-05 Revision 6	Duties of a Fire Watch
FPP-06 Revision 6	Control of Ignition Sources Hot Work Permit
FPP-07 Revision 1	Control of Flammable Liquids
FPP-08 Revision 1	Physical Requirements for Fire Brigade
FPP-010 Revision 3	Fire Protection Housekeeping

Procedure No. (cont'd)	Title
FPP-011 Revision 1	Explosive Materials Safety
FPP-012 Revision 2	Fire Preplans
FPP-013 Revision 5	Fire Protection Minimum Requirements and Mitigating Actions
FPP-014 Revision 2	Fire Protection Surveillance Requirements
FPP-015 Revision 0	Temporary Fire Seals
OMM-003, Revision 2	Equipment Inoperable Record

Based on this review it appears that all of the above procedures meet the NRC guidelines of NUREG-0800, Section 9.5.1 "Standard Review Plan" fire protection.

b. Fire Protection Surveillance Procedures

The inspector reviewed the following Fire Protection System Surveillance Procedures:

Procedure No.	Title
FTP-3001, Revision 1	Motor Driven Main Fire Pump Operability Test
FTP-3002, Revision 5	Fire Main Valve Position Verification, Monthly Interval
FPT-3003, Revision 3	Fire Suppression Valve Cycle Test Yearly
FPT-3005, Revision 3	Fire Suppression Non-accessible Valve Cycle Test, 18 Month Interval
FPT-3007, Revision 1	Hydrant Hose House Visual Inspection Monthly Interval
FPT-3009, Revision 1	Fire Hydrant Flow Test Annual Interval
FPT-3104, Revision 0	Hose Rack Inspection Fuel Handling Building, Monthly Interval
FPT-3105, Revision 0	Hose Rack Inspection Diesel Generator Building Monthly Interval
FPT-3302, Revision 1	Main Drain Test Auxiliary Building Quarterly Interval
FPT-3123, Revision 0	Hose Valve Operability Test Fuel Handling Building, Three Year Interval
FPT-3129, Revision 0	Fire Hose Valve Operability Test Containment, Three Year Interval
FPT-3306, Revision 1	Main Drain Test Fuel Oil Storage, Quarterly Interval

Procedure No. (cont'd)	Title
FPT-3307, Revision 1	Main Drain Test Diesel Generator Building Quarterly Interval
FPT-3430, Revision 0	Fire Damper Inspection 18 Month Interval RAB 190, 216, 305 and 332 Elevation
FPT-3500, Revision 5	Fire Door Check Daily
FPT-3503, Revision 2	Fire Door Monitor Trip Activating Device Operating Test Panel 3, Monthly Interval
FPT-3504, Revision 0	Fire Door Inspection Waste Processing Building, Semiannual Interval
FPT-3560, Revision 1	Fire Wrap Inspection, 18 Month Interval
FPT-3201, Revision 2	Fire Detection Functional Test, Local Fire Detection Panel 6, Month Interval
FPT-3213, Revision 3	Fire Detection Functional Test, Local Fire Detection Panel 13, 6 Month Interval
FPT-3214, Revision 3	Fire Detection Functional Test Local Fire Detection Panel 14, 6 Month Interval
FPT-3217, Revision 2	Fire Detection Functional Test Local Fire Detection Panel 17, 6 Month Interval
FPT-3203, Revision 2	Fire Detection Functional Test Local Fire Detection Panel 3, 6 Month Interval
FPT-3120, Revision 0	Fire Hose Valve Operability Test Auxiliary Building, 3 Year Interval

The above surveillance procedures were reviewed to determine if the various test outlines and inspection instructions adequately implement the surveillance requirements of the plant's fire protection program and FSAR. In addition, these procedures were reviewed to determine if the inspection and test instructions followed general industry fire protection practices, NRC fire protection program guidelines and the guidelines of the National Fire Protection Associated NFPA Fire Codes. Based on this review, it appears that the above procedures are satisfactory.

c. Fire Protection System Surveillance Inspections and Tests

The inspector reviewed the following surveillance inspection and test records for the dates indicated:

Procedure No.	Results Reviewed
FPT-3001 Weekly	10/24/88 to 03/23/89
FPT-3002 Monthly	09/19/88 to 03/20/89
FPT-3007 Monthly	11/07/88 to 03/15/89
FPT-3104 Monthly	11/23/88 to 03/15/89
FPT-3105 Monthly	12/05/88 to 03/21/89
FPT-3505 Daily	03/01/89 to 03/28/89
FPT-3503 Monthly	01/05/88 to 02/28/89
FPT-3504 Semi-Annual	03/15/88, 10/13/88, 03/21/89
FPT-3550 Eighteen Month Interval	06/08/88, 10/13/88
FPT-3430 Eighteen Month Interval	04/25/88
FPT-3506 Semi-Annual	03/17/99, 9/17/88 10/12/88
FPT-3302 Quarterly	02/05/88 to 02/03/89
FPT-3306 Quarterly	04/18/88 to 02/05/89
FPT-3213 Six Month Interval	11/30/88 to 03/4/88
FPT-3217 Six Month Interval	03/01/88 to 11/09/88
FPT-3203 Six Month Interval	02/16/88 to 11/14/88
FPT-3201 Six Month Interval	08/19/88 to 03/24/89
FPT-3213 Six Month Interval	03/04/88 to 11/30/89

The surveillance test record data and testing frequency associated with the above fire protection system surveillance test/inspections were found to be satisfactory with regard to meeting the requirements of the plant's Fire Protection Procedures.

d. Fire protection Audit

The most recent audit and surveillance reports of the Harris Fire Protection program were reviewed. These audits were:

QA Surveillance Report 88-173 11/02/88 to 01/20/89
QA Surveillance Report 89-024 01/16/89 to 02/07/89
QA Surveillance Report 88-089 06/07/88
QA Surveillance Report 88-049 03/11/88
QA Surveillance Report 88-044 03/15/88 to 03/22/88
QA Surveillance Report 88-026 02/15/88 to 02/16/88
QA Surveillance Report 88-022 02/09/88 to 02/10/88
QA Surveillance Report 88-018 02/08/88 to 02/09/88
QAA/0022-88-02 03/21-25/88
QAA/0022-89-01 03/06-10/89

These audits identified several fire protection program discrepancies and unresolved items, and recommended several program improvements. The licensee has either implemented the corrective action associated with these audit findings or a scheduled date for completion of the corrective actions has been established. The licensee appears to be taken the appropriate corrective actions on these audit findings.

e. Fire Brigade

(1) Organization

The total station fire brigade is composed of approximately 70 personnel from the operations and radwaste staff. The on duty shift brigade leader is normally one of the licensed operators and the remaining four fire brigade members are composed of operators and radwaste personnel. The inspector reviewed the on duty shifts for the follow dates and verified that sufficient qualified fire brigade personnel were on duty to meet the provisions of the plants Final Safety Analysis Report:

March 27, 1989
March 28, 1989
March 29, 1989

(2) Training

The inspector reviewed the training and drill records for seven brigade leaders and twelve brigade members for 1988 and 1989. The records reviewed indicated that each of these leaders and members had received and attended the required training and participated in the required number of drills. The inspector also verified that a fire brigade drill had been conducted every 92 days for each shift for 1988 and 1989. The fire brigade training records that were reviewed were found satisfactory.

In addition, the inspector reviewed the licensee's initial fire brigade training program to verify that the following training topics are being covered:

- Indoctrination of the plant fire fighting plan with specific identification of each individuals' responsibilities.

- Identification of the type and location of fire hazards and associated types of fires that could occur in the plant.

- The toxic and corrosive characteristics of expected products of combustion.

- Identification of the location of fire fighting equipment for each fire area and familiarization with the layout of the plant, including access and egress route to each area.

- The proper use of available fire fighting equipment and the correct method of fighting each type of fire. The types of fires should include fires in energized electrical

equipment, fires in cables and cable trays, hydrogen fires, fires involving flammable and combustible liquids or hazardous process chemicals, fire resulting from construction of modifications (welding), and record file fires.

- The proper use of communication, lighting, ventilation and emergency breathing equipment.
- The proper method for fighting fires inside buildings and confined spaces.
- The direction and coordination of the fire fighting activities (fire brigade leaders only).
- Detailed review of fire fighting strategies and procedures.
- Review of the latest plant modifications and corresponding changes in fire fighting plans.

Based on this review, it appears that the licensee's initial fire brigade training program covers the above required training topics. In addition, it appears that the licensee's fire brigade training program repeats the basic fire fighting skills of the initial program to qualified fire brigade members every two years.

(3) Fire Brigade Fire Fighting Strategies

The inspector reviewed the following plant fire fighting strategies:

Fire Zone 5-F-1-TKA/FAB E1216
Fire Zone 5-F-1 TKB/FAB E1216
Fire Zone 5-F-1-C1/FAB E1216
Fire Zone 5-F-1-AA1/FAB E1216
Fire Zone 1-A-L COME/DGB EL261
Fire Zone 1-A46 ST/DGB EL261
Fire Zone 1-D-DGB ER/RAB EL261
Fire Zone 1-D-1-DGA ER/RAB EL261
Fire Zone 1-D-DGB ER/RAB EL261
Fire Zone 1-A-4/CHFA/RAB 261
Fire Zone 1-A-4 COME/RAB 261
Fire Zone 1-A-EPA/RAB 261
Fire Zone 2-A-4 COME/RAB 261

Based on this review, the inspector determined that the above fire fighting strategies adequately addressed the fire hazards in the area, the type of fire extinguishants to be utilized, the direction of attack, systems in the room/area to be managed in

order to reduce fire damage heat sensitive equipment in the room/area, and specific fire brigade duties with regard to smoke control and salvage.

(4) Fire Brigade Drill

During this inspection, the inspector witnessed an unannounced fire brigade drill. The drill scenario was an electrical cord shorted out, causing transient combustibles to catch fire in the Waste Processing Building Room 144B 261 Elevation.

Six fire brigade members responded to the pending fire emergency in full protective fire fighting turnout clothing and self contained breathing apparatus. The scene leader established a command position and notified the control room and sent in a Recon team to size up the fire. The Recon team reported that the fire is in an area that is a contaminated storage area. The scene leader used a pre-fire plan to determine the plan of action. A 1-1/2 inch fire attack hose line was advanced into the area. The fire attack hose lines were placed in service and the fire was placed under control in ten minutes.

The fire brigade utilized proper manual firefighting methods and reacted to the fire drill scenario in an effective and efficient manner. However, the team was cautioned about a backup line being needed during the attack. Also, radio communications were poor. The fire protection technician indicated that use of a backup hose line would be discussed in quarterly training.

f. Plant Tour and Inspection of Fire Protection Equipment

(1) Outside Fire Protection Walkdown

The inspector verified that the two fire pump suction intake structures from the Harris lake were in service.

The electric and diesel fire pumps were inspected and found to be in service. The diesel driven fire pump contained approximately 400 gallons of fuel which met the requirements of procedure FPP-014. The inspector also observed a weekly test of the Electric and Diesel Driven Fire Pumps.

The following sectional control valves in the outside fire protection water supply system were inspected and verified to be properly aligned, locked and electrically supervised in position.

3FP-6	3FP-91
3FP-25	3FP-123
3FP-24	3FP-125

3FP-30	3FP-126
3FP-81	3FP-129
3FP-82	3FP-1035
3FP-88	3FP-1037
3FP-89	3FP-1044

The following fire hydrants and fire hydrant equipment houses were inspected.

3FP-38	3FP-79
3FP-49	3FP-86
3FP-54	3FP-87
3FP-60	3FP-90
3FP-62	3FP-92
3FP-65	3FP-121
3FP-69	3FP-433

The equipment houses contained the minimum equipment requirements of that specified by NFPA-24, Private Fire Service Mains and Their Appurtenances and/or the FSAR Requirements. The equipment appeared to be adequately maintained.

A tour of the exterior of the plant indicated that sufficient clearance was provided between permanent safety related buildings and structures and temporary buildings trailers and other transient combustible materials. The general housekeeping of the areas adjacent to the permanent plant structures was satisfactory.

(2) Permanent Plant Fire Protection Features

A plant tour was made by the inspector. During the plant tour, the safe shutdown related plant areas within the Reactor Auxiliary Building (RAB) and their related fire protection features were inspected.

The fire/smoke detection systems manual fire fighting equipment (i.e. portable extinguishers, hose stations, etc.) and the fire area boundary walls, floors and ceiling associated for the above plant areas were inspected and verified to be in service or functional.

The automatic sprinkler systems installed in the 190 and 305 elevation of the RAB were inspected and found to be in service.

Based on this inspection, it appears that the fire protection features associated with the above plant areas are satisfactorily maintained.

The plant tour also verified the licensee's implementation of the fire prevention administrative procedures. The control of combustibles and flammable materials, liquids and gases, and the general housekeeping were found to be satisfactory in the areas inspected.

(3) NUREG 0800 Fire Protection Features

The inspector visually inspected the fire rated raceway fire barriers required for compliance with NUREG 0800, Section c.5.b in the following plant areas.

Reactor Auxiliary Building Elevation 236
Reactor Auxiliary Building Elevation 261
Reactor Auxiliary Building Elevation 286
Reactor Auxiliary Building Elevation 305

Based on the inspectors observations of the raceway fire barrier enclosures in the areas above, it appears that the one hour fire barrier integrity associated with the above fire barrier assemblies are being properly maintained in a satisfactory condition.

The inspector also visually inspected the one hour fire rated barriers separating MC 1A35-SA and 1A3S-SB. Based on this inspection the inspector determined that the one hour fire resistive integrity associated with the equipment fire barrier was being properly maintained in a satisfactory condition.

The inspector made a walkdown of the NUREG 0800 related sprinkler protection in the following plant areas.

Fire Zone	RAB Elevation
1-A-1-PA	190
1-A-1-PB	190
1-A-3-PB	236
1-A-EPA	261
1-A-EPB	261
1-A-CSR-A	286
1-A-CSR-B	286

Based on this walkdown, the inspector determined that the sprinkler protection provided for the areas identified above provided sufficient protection with respect to controlling an exposure fire.

The following eight-hour emergency lighting units were inspected:

Unit No.

RAB-4	RAB-286
RAB-67	RAB-52
RAB-12	RAB-286
RAB-45	RAB-50
RAB-32	RAB-63

These units were in service and appeared to be properly aligned. The inspector followedup on a concern identified in a previous inspection regarding improperly aligned lighting and a concern that the procedure did not adequately address ensuring the lights remained properly aligned. During that inspection the licensee stated the procedure would be revised to include verifying proper alignment. During this inspection the inspector verified that the procedure had been revised to address verifying proper lighting alignment.

3. Action on Previous Inspection Findings

(Closed) Violation (400/88-01) Inadequate Procedure FPP-013 for Implementing Mitigating Actions for Inoperable Fire Suppression Systems. The inspector verified that FPP-013 had been revised to cover the requirements for implementing mitigating actions for inoperable fire suppression systems.

(Closed) Violation (400/88-02) Failure to perform Quarterly Surveillance of the Multicycle and Preaction Sprinkler Systems on the 190, 286, and 305 Elevations of the Reactor Auxiliary Building. The inspector verified that proper corrective steps were taken on this violation. These included periodic test of fire protection features which are not completed by the scheduled due date are now placed on a status board in the fire protection office. In addition, the test task sheet is marked to indicate the equipment inoperable report EIR number and Work Requests and Authorization Number. The periodic test is then placed on the "Tests Exception" Listing of the Daily Batch Report. Prior to canceling an EIR the Daily Batch Report will be checked to determine whether there are other surveillances past due.

4. Exit Interview

The inspection scope and results were summarized on March 31, 1989, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspector during this inspection.