



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

Report Nos.: 50-335/88-05 and 50-389/88-05

Licensee: Florida Power and Light Company
9250 West Flagler Street
Miami, FL 33102

Docket Nos.: 50-335 and 50-389

License Nos.: DPR-67 and NPF-16

Facility Name: St. Lucie 1 and 2

Inspection Conducted: March 7-11, 1988

Inspector: G. R. Wiseman 3/21/88
G. R. Wiseman Date Signed

Accompanying Personnel: D. C. Ward

Approved by: T. E. Conlon 3-21-88
T. E. Conlon, Chief Date Signed
Plant Systems Section
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection was conducted in the area of Fire Protection/Prevention.

Results: No violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- *J. H. Barrow, Fire Protection Supervisor
- *J. Barrow, Operations Superintendent
- *R. Belire, Fire Protection
- *G. Boissy, Plant Manager
- *J. Harper, Quality Assurance Superintendent
- *K. Harris, Site Vice President
- *R. Jennings, Technical Advisor
- *L. McCaugalin, Technical
- *B. McDaniel, Fire Protection Coordinator
- *W. McGavic, Quality Assurance
- *D. Newberry, Mechanical Maintenance
- *B. Parks, Quality Assurance Supervisor
- *N. Roos, Quality Control Supervisor
- *D. Sipos, Services Manager
- *J. West, Operations
- *M. Wolaver, Technical Staff
- *E. Wunderlich, RE Supervisor

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC Resident Inspector

*H. Bibb

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on March 11, 1988, with those persons indicated in Paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee. No new items were identified during this inspection.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspector during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Fire Protection/Prevention Program (64704)

a. Fire Protection/Administrative Control Procedures

The inspector reviewed the following Fire Prevention/Administrative Procedures:

<u>Procedure No.</u>	<u>Title</u>
0005729 (Rev. 6)	Fire Protection Training, Qualifications, and Requalification
0010139 (Rev. 4)	Fire Protection Schedule of Tests and Report
0010239 (Rev. 2)	Fire Protection System Impairments
0010434 (Rev. 21)	Plant Fire Protection Guidelines
0010722 (Rev. 6)	Plant Management Inspection - Weekly Inspection
1800022 (Rev.9)	Fire Protection Program

Based on this review, it appears that the above procedures meet the NRC guidelines of the document entitled, "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls, and Quality Assurance," dated June 1977.

The inspector noted that minimum training qualifications for fire watches assigned to monitor ignition source work have not been established in site procedures. Currently, all site personnel receive fire protection training as part of General Employee Training; however, this training does not include the specific duties for fire watches for ignition source work or detailed instructions on the uses and limitations of fire extinguishers. Therefore, it is possible the personnel could be assigned ignition source fire watch duty without specific training of their responsibilities and training on the uses and limitations of fire extinguishers. The licensee's commitments to perform such training are vague and could be interpreted as requiring some minimum training or not requiring the training. The inspector reviewed actual fire reports resulting from ignition source use between 1985 to 1988 to determine if these fires were extinguished by the assigned fire watch. The inspector found that in all cases the fire watch was capable of extinguishing these fires. The inspector requested that the licensee evaluate the value of such job specific training for these fire watches in order to further enhance the fire protection program. The licensee agreed to evaluate the need for further training.

b. Fire Protection Surveillance Procedures

The inspector reviewed the following Fire Protection System Surveillance Procedures:

<u>Procedure No.</u>	<u>Title</u>
0940066 (Rev. 3)	Portable Emergency Lighting Maintenance and Inspection
1800050 (Rev. 24)	Monthly Fire Valve, Fire Pumps Surveillance and Wet Pipe Sprinkler System Tests
1800053 (Rev. 20)	Fire Protection Water System Annual, 18 Month, and 3-Year Tests
1-M-0018F (Rev. 2)	Mechanical Maintenance Safety Related Preventive Maintenance Program (Fire PM's) PM 258
1-M-0018 (Rev. 2)	Mechanical Maintenance Safety Related Preventive Maintenance Program (Fire PM's) PM-271

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 Technical Specifications. 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 Associations (NFPA) Fire Codes. Based on this review, it appears that the above procedures are satisfactory, except PM-271 associated with Procedure 1-M-0018 does not include all of the fire door criteria contained in NFPA 80, Fire Doors and Windows. The licensee has contracted a professional door maintenance organization to ensure the fire doors are properly maintained. The inspector found the doors to be in satisfactory condition during the plant tour. Therefore, the inspector requested that the licensee evaluate the need for including the additional criteria from NFPA 80 to ensure the doors are adequately maintained over the life of the plant. The licensee agreed to evaluate the need for including these additional criteria in the procedure.

c. Fire Protection System Surveillance Inspections and Tests

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

<u>Procedure No.</u>	<u>Results Reviewed</u>
1800053 (3-Year)	2/17/88
1-M-0018F (PM 258)	All results for 1987
1800050 (Monthly)	All results for 1987
2-M-0018F (PM 05417)	11/5/87



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 Technical Specifications.

d. Fire Protection Audit

The most recent audit reports of the St. Lucie Fire Protection Program were reviewed. These audits were:

<u>Audit No.</u>	<u>Title/Date</u>
QSL-OPS-86-49	Triennial Fire Protection (Factory Mutual) December 4, 1986
QAO-PSL-85-38	January 16, 1985 - March 19, 1985 (QA)
QSL-87-329	August 4-20, 1987 (QA)

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

e. Fire Reports

The inspector reviewed the station fire reports for 1985, 1986, and 1987. These reports indicated the following incidents of fires in safety-related areas:

1985	3
1986	0
1987	1

Eleven fires occurred during this period in nonsafety-related areas. Of the fire events reviewed approximately one-half of the events involved equipment failure and the remainder involved welding or cutting activities.

Two of the four fires in safety-related areas were significant. These involved fires in the Unit 2 Reactor Coolant Pumps. The first occurred on August 24, 1985, while the most recent fire occurred November 28, 1987. Both fires were reported by Licensing Event Report (LER) in accordance with 10 CFR 50.73. The licensee is presently evaluating these two events and is determining methods to prevent the reoccurrence.

f. Fire Brigade

(1) Organization

The total station fire brigade is composed of approximately 81 personnel from the operations staff. The on duty shift fire brigade leader is normally the Nuclear Watch Engineer and the remaining four fire brigade members are composed of operators. The inspector reviewed the on duty shifts for November 1987 and verified that sufficient qualified fire brigade personnel were on duty to meet the provisions of the plant's Technical Specifications. In addition, the inspector verified that sufficient personnel were assigned to each shift to meet the minimum operating shift manning requirements of the Technical Specifications. Therefore, it appears based on the review of the duty rosters associated with the above dates, that there was sufficient manpower on duty to meet both the operational and the fire brigade requirements of the plant's Technical Specifications.

(2) Training

The inspector reviewed the training and drill records for five brigade leaders and eleven brigade members for 1986 and 1987. The records reviewed indicated that each of these leaders and members had received an annual medical review, attended the required training and participated in the required number of drills. The inspector also verified that a fire brigade drill had been conducted quarterly for each shift for 1987. The fire brigade training records which were inspected were found satisfactory.

The inspector also had the opportunity to witness an annual "live fire" training class conducted by the licensee at their fire training facility. The training observed dealt with the use of fire extinguishers and hose lines on Class B combustible liquids fires. This training appeared to be 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 firefighting plan with specific identification of each individual's 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 firefighting equipment for each fire area and familiarization with the layout of the plant, including access and egress routes to each area.
- The proper use of available firefighting 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 or modifications (welding), and record file fires.
- The proper use of communication, lighting, ventilation and emergency breathing equipment.
- The proper method for the fighting fires inside buildings and confined spaces.
- The direction and coordination of the fire fighting activities.
- Detailed review of firefighting strategies and procedures.
- Review of the latest plant modifications and corresponding changes in firefighting 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:

<u>Strategy No.</u>	<u>Room Name</u>
6	Unit 2 Cable Spreading Room
7	Unit 2 'B' Switchgear Room
9	Unit 2 A DC Equipment Room
30	Unit 2 RAB Pipe Tunnel
35	Unit 2 Charging Pump Cubicles
43	Unit 2 CCW Building

Based on this review, the inspector determined that the above firefighting 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 fire scenario was a fire in the Unit 2 Motor Driven Auxiliary Feedwater Pump 2A caused by pump failure resulting in the pump oil igniting in the area.

Thirteen fire brigade members responded to the pending fire emergency. The brigade assembled outside the pump area in full protective firefighting turnout clothing and self contained breathing apparatus. An initial size-up of the fire condition was made by the fire brigade leader and seven brigade members advanced one 1-1/2 inch fire attack hose line and four portable extinguishers into the area. The fire attack hose line and portable extinguishers were placed in service on the fire and the fire was placed under control in 17 minutes. In addition, the fire brigade initiated fire victim search and rescue, smoke control, and water control operations.

The fire brigade utilized proper manual firefighting methods and reacted to the fire drill scenario in an effective and efficient manner.

During this drill the resident inspector was present in the control room to evaluate control room activities. The details regarding his evaluation will be contained in the resident inspectors monthly report for March 1988.

g. Plant Tour and Inspection of Fire Protection Equipment

(1) Outside Fire Protection Walkdown

The inspector verified that the two water storage tanks contained sufficient water to meet the requirements of the Technical Specifications. The two fire pumps were inspected and found to be in service.

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

<u>Valve No.</u>	<u>Description</u>
V-15283	1B CWST Outlet
V-15282	Fire Pump Suction Cross-conn.
V-15117	1B Fire Pump Suction



<u>Valve No.</u> (cont'd)	<u>Description</u>
V-15281	1A CWST Outlet
V-15134	East Fire Loop Sectionalizing Valve
V-15171	West Fire Loop Sectionalizing Valve
V-15284	West Fire Loop Post Indicator
2-V-15530	Southwest Turbine Building Post Indicator

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

Fire Hydrant Hose House	3
Fire Hydrant Hose House	6
Fire Hydrant Hose House	2-9
Fire Hydrant Hose House	2-22
Fire Hydrant Hose House	2-25
Fire Hydrant Hose House	2-26
Fire Hydrant Hose House	3-36

The equipment houses contained the minimum equipment requirement of that specified by NFPA-24, Private Fire Service Mains and Their Appurtenances, and the FSAR commitments. 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 following safe shutdown related plant areas and their related fire protection features were inspected:

<u>Fire Area/Zone</u>	<u>Description</u>
HH/6	Unit 1 Diesel 1A
II/7	Unit 1 Diesel 1B
HH/8	Unit 2 Diesel 2A
II/9	Unit 2 Diesel 2B
B/52	Unit 2 Cable Spreading Room

The fire/smoke detection systems, manual firefighting 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 Unit 1 and Unit 2 diesel generator rooms and the Halon system installed in the Unit 2 cable spreading room 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 very good in the areas inspected.

During the inspector's tour of the Unit 1 Reactor Auxiliary Building -.5 elevation and the Diesel Generator Rooms, the inspector identified to the licensee's fire protection personnel areas where the installed fire suppression systems and detection systems did not appear to be in strict compliance with the applicable NFPA codes. If properly evaluated, such deviations from NFPA codes are acceptable; however, per Generic Letter 86-10 such deviations must be identified and the evaluations available for review. Deviations from NFPA codes will be evaluated as part of a future Appendix R and Safe Shutdown Inspection for Unit 1.

(3) Appendix R Fire Protection Features

The inspector visually inspected the fire rated raceway fire barriers required for compliance with Appendix R, Section III.G.2 in the following plant areas:

<u>Fire Area</u>	<u>Description</u>
A/77	Unit 1 Electrical East Penetration Area
C/78	Unit 1 West Electrical Penetration
E/62	Unit 1 West Electrical Penetration Area
B/52	Unit 2 Cable Spreading Room

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

The inspector also visually inspected the partial height fire barriers separating the Unit 1 and 2 charging pumps. The partial height barriers were found to be intact and appeared to be properly maintained in satisfactory condition.



The inspector made a walkdown of the Appendix R related sprinkler protection in the following plant areas:

Unit 2 Cable Loft and Hallway (Preaction)
 Unit 2 "A" Cable Penetration Room (Preaction)
 Unit 2 "B" Cable Penetration Room (Preaction)
 Unit 2 Cable Spreading Room (Preaction)

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:

<u>Unit No.</u>	<u>Location</u>
EL-79	19.5' Reactor Auxiliary Building
EL-80	19.5' Reactor Auxiliary Building
EL-69	-.5' Reactor Auxiliary Building
EL-68	-.5' Reactor Auxiliary Building
EL-70	-5' Reactor Auxiliary Building

These units were in service, lamps properly aligned and appeared to be properly maintained.

Within the areas inspected, no violations or deviations were identified.

