



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION II  
SAM NUNN ATLANTA FEDERAL CENTER  
61 FORSYTH STREET, SW, SUITE 23T85  
ATLANTA, GEORGIA 30303-8931

December 4, 2006

Florida Power and Light Company  
ATTN: Mr. J.A. Stall, Senior Vice President  
Nuclear and Chief Nuclear Officer  
P.O. Box 14000  
Juno Beach, FL 33408-0420

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC TRIENNIAL FIRE PROTECTION  
INSPECTION REPORT 05000335/2006010 AND 05000389/2006010 AND  
EXERCISE OF ENFORCEMENT DISCRETION

Dear Mr. Stall:

On October 20, 2006, the U.S. Nuclear Regulatory Commission (NRC) completed a triennial fire protection inspection at your St. Lucie Nuclear Plant, Units 1 and 2. The enclosed report documents the inspection results, which were discussed on October 20, 2006, with Mr. C. Costanzo and other members of your staff. Following completion of additional review in the Region II office, a final exit was held by telephone with Mr. R. Hughes and other members of your staff on December 4, 2006, to provide an update on changes to the preliminary inspection findings.

The inspection examined activities conducted under your licenses as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your licenses. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel. The scope of the inspection was reduced, in accordance with NRC Inspection Procedure 71111.05TTP, issued May 9, 2006, as a result of your ongoing project to convert the fire protection licensing basis to the performance based risk-informed methodology described in National Fire Protection Association Standard 805.

This report documents one NRC-identified finding of very low safety significance (Green). This finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest the NCV in this report, you should provide a response within 30 days of the date of this report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington DC 20555-0001; and the NRC Resident Inspector at the St. Lucie Nuclear Plant.

The enclosed report also documents two noncompliances that were identified during the inspection. The NRC is not taking enforcement action for these noncompliances because they

meet the criteria of NRC Enforcement Policy, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)."

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

D. Charles Payne, Chief  
Engineering Branch 2  
Division of Reactor Safety

Docket Nos.: 50-335, 50-389  
License Nos.: DPR-67, NPF-16

Enclosure: Inspection Report 05000335/2006010 and 05000389/2006010  
w/Attachment; Supplemental Information

cc w/encl: (See page 3)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-335, 50-389

License Nos.: DPR-67, NPF-16

Report Nos.: 05000335/2006010, 05000389/2006010

Licensee: Florida Power & Light Company (FPL)

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6351 South Ocean Drive  
Jensen Beach, FL 34957

Dates: October 2-6, 2006 (Week 1)  
October 16-20, 2006 (Week 2)

Inspectors: M. Thomas, Senior Reactor Inspector (Lead Inspector)  
F. McCreesh, Fire Protection Engineer (Consultant)  
J. Quinones, Reactor Inspector  
N. Staples, Reactor Inspector

Accompanying: L. Bradford, Nuclear Safety Professional Development Program  
(October 2-6, 2006)

Approved by: D. Charles Payne, Chief  
Engineering Branch 2  
Division of Reactor Safety

## SUMMARY OF FINDINGS

IR 05000335/2006010, 05000389/2006010; 10/2-6/2006 and 10/16-20/2006; St. Lucie Nuclear Plant, Units 1 and 2; Triennial Fire Protection Inspection.

This report covers an announced two-week triennial fire protection inspection by three regional inspectors, one contractor, and one inspector trainee. One Green non-cited violation (NCV) was identified. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG 1649, "Reactor Oversight Process" Revision 3, dated July 2000.

### A. NRC-Identified and Self-Revealing Findings

#### Cornerstone: Mitigating Systems

Green. The team identified a non-cited violation of Unit 1 Operating License Condition 3.E for failure to perform tests on the sound powered phone system credited for post-fire safe shutdown in accordance with the approved Unit 1 fire protection program (FPP). The Unit 1 FPP (described in the Updated Final Safety Analysis Report, Appendix 9.5A) listed communications (which includes the sound powered phone system) as being subject to periodic inspections and/or testing. The annual surveillance test procedure for the sound powered phones, OP-1-0010125A, Schedule of Periodic Tests, Checks, and Calibrations, had not been performed since July 2004.

The finding is more than minor because, when the licensee initially performed the missed surveillance test, some of the sound powered phones did not work. This finding affects the ability of the licensee to maintain the communications system and is associated with the mitigating systems cornerstone and its respective attribute of protection against external factors (i.e., fire). The team determined that this finding was of very low safety significance (Green) because other communications systems (i.e., radios) credited in the FPP were verified to be available. The licensee initiated Condition Report (CR) 2006-28784 to address the issue of the missed surveillance test and CR 2006-29158 to address the deficiencies identified during the initial retest of the missed surveillance. The surveillance test was successfully performed during the inspection. (Section 1R05.08)

### B. Licensee-Identified Violations

None

## REPORT DETAILS

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

#### 1R05 Fire Protection

The purpose of this inspection was to review the St. Lucie Nuclear Plant (PSL) fire protection program (FPP) for selected risk-significant fire areas. The inspection was performed in accordance with the U.S. Nuclear Regulatory Commission (NRC) Inspection Procedure (IP) 71111.05TTP, "Fire Protection-NFPA 805 Transition Period (Triennial)," dated 05/09/2006, for a plant in transition to National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition. This inspection fulfilled the baseline inspection program requirements for the triennial review of fire protection and post-fire safe shutdown program performance. The FPP was assessed against the requirements of 10 CFR Part 50.48(a) and (b) while the licensee is in the process of transitioning to NFPA 805 to implement the requirements of 10 CFR 50.48(c). The NRC reduced the scope of this inspection by not specifically targeting safe shutdown circuit configurations for inspection. Emphasis was placed on verification that procedures, including local manual operator actions, for post-fire safe shutdown (SSD) and the fire protection features provided for the selected fire areas met NRC requirements. The inspection was also performed in accordance with the NRC Reactor Oversight Process (ROP), using a risk-informed approach for selecting the fire areas and attributes to be inspected. The selection of risk-significant fire areas to be evaluated during this inspection considered the licensee's Individual Plant Examination for External Events, information contained in FPP documents, results of prior NRC triennial inspections, and observations noted during in-plant tours. The fire areas (FA)/fire zones (FZ) chosen for review during this inspection were:

- Unit 1 FA B/FZ 57, Cable Spreading Room (CSR), Elevation 43 feet. A fire in this area may result in evacuation of the Unit 1 main control room (MCR) and alternative shutdown of the plant could be achieved from the hot shutdown control panel (HSCP) with additional local manual operator actions in various areas of the plant. Safe shutdown using Train B equipment is credited for a fire in this FA/FZ.
- Unit 1 FA C/FZ 56, Train B Switchgear Room, Elevation 43 feet. Safe shut down of Unit 1 from the MCR using Train A equipment is credited for a fire in this FA/FZ.
- Unit 1 FA O/FZ 36, Main Hallway, Elevation -0.5 feet. Safe shut down of Unit 1 from the MCR using Train A equipment is credited for a fire in this FA/FZ.

Section 71111.05-05 of the IP specifies a minimum sample size of three fire areas. Inspection of these FAs/FZs fulfills the procedure completion criteria. The inspection team evaluated the Unit 1 FPP against applicable requirements which included the fire protection program report contained in Appendix 9.5A of the Updated Final Safety Analysis Report (UFSAR); plant Technical Specifications (TS); Unit 1 renewed operating

license, Condition 3.E; NRC safety evaluation reports (SERs); 10 CFR 50.48(a) and (b); and 10 CFR 50, Appendix R and NRC approved exemptions to Appendix R. The team also reviewed related documents that included the fire hazards analysis (FHA) and post-fire safe shutdown analysis (SSA). Specific documents reviewed by the team are listed in the Attachment.

.01 Post-Fire Safe Shutdown From Outside the Main Control Room (Alternative Shutdown) and Safe Shutdown From the Main Control Room (Normal Shutdown)

a. Inspection Scope

Methodology

The team reviewed the SSA, off-normal operating procedures (ONPs), piping and instrumentation drawings (P&IDs), electrical drawings, the UFSAR, and other supporting documents for postulated fires in FZ 57. The review was performed to verify that hot and cold shutdown could be achieved and maintained from outside the MCR for fires that rely on alternative shutdown from outside the MCR. This review also included verification that shutdown from outside the MCR could be performed both with and without the availability of offsite power. Plant walkdowns were also performed to verify that the plant configuration was consistent with that described in the FHA and SSA. These inspection activities focused on ensuring the adequacy of systems selected for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring instrumentation and support systems functions. The team reviewed the systems and components credited for use during this shutdown method to verify that they would remain free from fire damage.

Similarly, for postulated fires that utilize shutdown from the MCR (FZ 36 and FZ 56), the team performed reviews to verify that the shutdown methodology properly identified the components and systems necessary to achieve and maintain SSD conditions.

Operational Implementation

The team reviewed the training program for licensed and non-licensed operators to verify that the training reinforced the shutdown methodology in the SSA and ONPs for the selected FAs/FZs. The team also reviewed shift turnover logs and shift manning to verify that personnel required for SSD using the alternative or normal shutdown systems and procedures were available onsite, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire SSD and performed a walk through of procedure steps to ensure the implementation and human factors adequacy of the procedures. The team also reviewed selected operator actions to verify that the operators could reasonably be expected to perform the specific actions within the time required to maintain plant parameters within specified limits.



Time critical actions reviewed included electrical power alignment, establishing control at the hot shutdown control panel (HSCP), establishing reactor coolant makeup, and establishing decay heat removal. The team reviewed and walked down applicable sections of the following fire response off-normal operating procedures:

- 1-ONP-100.01, Response to Fire, Rev. 19
- 1-ONP-100.01, Appendix 36 (FA O/FZ 36), Rev. 19
- 1-ONP-100.01, Appendix 56 (FA C/FZ 56), Rev. 19
- 1-ONP-100.02, Control Room Inaccessibility, Rev. 16A

The team also reviewed the periodic test procedures and test records of the alternative shutdown transfer capability and instrumentation and control functions to ensure the tests were adequate to verify the functionality of the alternative shutdown capability. Electrical schematics were reviewed to verify that circuits for SSD equipment, which could be damaged due to fire, were isolated by local transfer switches. In addition, the team reviewed wiring diagrams for instrumentation located on the HSCP to verify that necessary process monitoring was available per 10 CFR 50, Appendix R, Section III.L.

The team reviewed operator manual actions to ensure that the actions could be implemented in accordance with plant procedures in the times necessary to support the SSD method for the applicable fire area. The team reviewed the licensee's timeline and manual action feasibility report for FA C/FZ 56 and FA O/FZ 36. The team reviewed the manual actions to verify that those actions met the criteria in Enclosure 2 of NRC IP 71111.05TTP. The team reviewed condition report (CR) 2006-20062, Regulatory Expectations With Appendix R Paragraph III.G.2 Operator Manual Actions, to verify that the licensee had identified operator manual actions for post-fire SSD in III.G.2 areas and had plans in place to keep CR 2006-20062 open to assess and track resolution of the manual action issue as part of the plant-wide risk evaluation for transition to NFPA 805. Specific documents and components reviewed for alternative shutdown from outside the MCR and normal MCR shutdown are listed in the Attachment.

b. Findings

Introduction

A Green non-cited violation (NCV) of TS 6.8.1.a, was identified for inadequate procedural guidance related to the use of Unit 1 Procedure 1-ONP-100.02. Specifically, steam generator (S/G) narrow range level indicator LI-9006 referenced in this procedure may not provide the operators with reliable indication during operation at the HSCP because the cables for LI-9006 are routed through the fire area of concern (FZ 57) and may be damaged due to fire.

Description

During review of Procedure 1-ONP-100.02, the team noted that Train B components were credited for SSD for a postulated fire in FZ 57. The team reviewed cable routing information for selected components referenced in the procedure to verify that the

components would be available during alternative shutdown from the HSCP. The procedure directed the operators to maintain S/G 1B level at approximately 65% on level indicator LI-9006 at the HSCP. The team noted that LI-9006 may not provide reliable S/G level indication for the operators at the HSCP because the cable was routed through FZ 57 and may be damaged due to fire. This may delay operator actions required to bring the plant to SSD conditions. During walkdowns of the HSCP, the team noted that the HSCP also had S/G Wide Range Level Indicator LI-9022, which was not routed through FZ 57 and thus would not be affected by the fire. The SSA indicated that only LI-9022 could be relied upon for SSD in the event of a severe CSR fire. However, the team noted that LI-9022 was not referenced in the procedure. During discussions with the team, plant operators indicated they would compare level readings between LI-9006 and LI-9022 for S/G 1B in the event that LI-9006 provided erroneous indications. The inspectors determined that, based on the operators' experience, training, and other instrumentation available at the HSCP, it is likely plant operators would be able to determine the correct S/G level and take the appropriate actions required to ensure post-fire SSD conditions.

### Analysis

Inadequate SSD procedure guidance is a performance deficiency. The performance deficiency is more than minor because it is associated with the reactor safety mitigating systems cornerstone attributes of protection against external events, i.e., fire, and procedure quality. This finding was determined to be of very low safety significance (Green) using Appendix F of the Significance Determination Process (SDP), because it did not adversely affect components credited for reactivity control, reactor coolant makeup, reactor heat removal, and support systems functions. The team determined that based on experience, training, and other instrumentation available at the HSCP, it is likely plant operators would be able to determine the correct S/G level and take the appropriate actions required to ensure post-fire SSD conditions.

### Enforcement

Technical Specification 6.8.1.a. requires that written procedures shall be established, implemented, and maintained covering the activities in Appendix "A" of Regulatory Guide (RG) 1.33, Rev 2. RG 1.33, Section 6.v, requires procedures for emergencies such as plant fires. Off-Normal Operating Procedure 1-ONP-100.02, Control Room Inaccessibility, Rev. 16A, provides instructions for placing St. Lucie Unit 1 in a safe condition when operations cannot be conducted from the MCR due to a fire in the MCR or the CSR.

Contrary to the above, on October 20, 2006, the team determined that Unit 1 Procedure 1-ONP-200.02 provided inadequate guidance for monitoring S/G level at the HSCP. Specifically, S/G narrow range level indicator LI-9006 credited in the procedure may not provide reliable indication during operation at the HSCP because the cables for LI-9006 were routed through the CSR and could have been damaged during a CSR fire. The licensee initiated CR 2006-28480 to correct the procedure and revise the SSD equipment list.

Enclosure

Pursuant to the Commission's Enforcement Policy and NRC Manual Chapter 0305, under certain conditions fire protection findings at nuclear power plants that transition their licensing bases to 10 CFR 50.48(c) are eligible for enforcement and ROP discretion. The Enforcement Policy and ROP also state that the finding must not be evaluated as Red. On December 22, 2005, the licensee submitted a letter to the NRC stating its intent to transition to 10 CFR 50.48(c).

Because the licensee committed, prior to December 31, 2005, to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement discretion for this issue in accordance with the NRC Enforcement Policy, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." Specifically, this issue would have been expected to be identified and addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program and will be corrected, was not likely to have been previously identified by routine licensee efforts, was not willful, and was not associated with a finding of high safety significance.

.02 Protection of Safe Shutdown Capability

a. Inspection Scope

For the selected fire areas, the team evaluated the potential for fires, the combustible fire load characteristics, potential exposure fire severity, the separation of systems necessary to achieve and maintain SSD, and the separation of electrical components and circuits to ensure that at least one SSD train of equipment was free of fire damage.

The team walked down the selected plant fire areas to observe: (1) the material condition of the protection systems and equipment; (2) the storage of permanent and transient combustible materials, (3) the fire barrier enclosures and fire protection features in the areas and, (4) the licensee's implementation of the procedures for limiting fire hazards, housekeeping practices, and cleanliness conditions. These reviews were accomplished to ensure that the licensee was maintaining the fire protection systems, had properly evaluated in-situ combustible fire loads, controlled hot-work activities, and limited transient fire hazards in a manner consistent with the plant administrative controls and fire protection procedures.

The team reviewed the fire protection features in place to protect SSD capability as compared to the separation and design requirements of Appendix R, Section III.G. The team also reviewed the fire fighting pre-plans for the selected areas to determine if appropriate information was provided to the fire brigade members to identify equipment important to safe shutdown and to facilitate fire suppression of a fire that could impact safe shutdown capability. These reviews were performed to ensure that the defense-in-depth objectives established by the NRC-approved fire protection program were satisfied.

The team also reviewed the separation of systems necessary to achieve SSD to ensure that at least one train of SSD systems would remain free of fire damage. The team inspected the relevant plant areas to verify the routing was consistent with the design documents. The equipment reviewed in each of the selected fire areas is listed in the Attachment.

b. Findings

No findings of significance were identified.

.03 Passive Fire Protection

a. Inspection Scope

The team inspected the material condition of accessible passive fire barriers surrounding and within the fire areas selected for review. Barriers in use included walls, ceilings, floors, mechanical and electrical penetration seals, doors, and dampers. Construction details and fire endurance test data which established the ratings of fire barriers were reviewed by the team. Engineering evaluations and relevant exemptions described in NRC safety evaluations related to fire barriers were reviewed. Electrical fire barrier raceway systems were reviewed to confirm that the appropriate materials and test data were used to assure that the respective fire barriers met their intended design function. The team further examined installed barriers to compare the configuration of the barrier to the rated configuration.

b. Findings

No findings of significance were identified.

.04 Active Fire Protection

a. Inspection Scope

The team performed in-plant observations of systems, reviewed design documents, and reviewed applicable NFPA codes and standards, to assess the material condition and operational lineup of fire detection and suppression systems. The appropriateness of detection and suppression methods for the category of fire hazards in the various areas was evaluated. The preaction and wet pipe sprinkler systems for the selected fire areas were inspected. The Halon 1301 suppression system in the CSR (FA B/FZ 57) was also reviewed. Fire suppression systems were evaluated from source to discharge device including hydraulic calculations performed by the licensee to demonstrate adequate flow, pressure and water distribution.

The team reviewed the fire brigade staging and dress-out areas to assess the operational readiness of fire fighting and smoke control equipment. The fire brigade personal protective equipment and the self-contained breathing apparatuses were reviewed for adequacy and functionality. The team also reviewed operator and fire brigade staffing, fire brigade response, fire fighting pre-plans, fire brigade qualification training, and the fire brigade drill program procedures. Two fire brigade response-to-drill scenarios that transpired over the last 6 months were reviewed.

The team reviewed selected fire protection water delivery and supply system components required for manual fire fighting and/or water-based fixed automatic fire suppression systems to verify that the components would not be damaged or inhibited from fire-induced failures of electrical power supplies or control circuits. The team reviewed the SSA to verify that the availability of the fire pumps was evaluated for the selected fire areas. The team reviewed control wiring diagrams, elementary diagrams, cable routing information, and perform field walkdowns to verify that protection of control and power cables was consistent with the FPP documents for the selected fire areas.

b. Findings

Halon 1301 Automatic Fire Suppression System Out Of Service

Introduction: The team identified an unresolved item related to the licensee's failure to comply with the approved Unit 1 FPP for the out of service Halon 1301 fire suppression system in the Unit 1 CSR (FA B/FZ 57). Specifically, the system has been out of service since inadvertently discharging in December, 2005. The team did not find evidence in the licensee's corrective action program to demonstrate the planned return of this system to operable status in a timely manner.

Description: The Unit 1 CSR is equipped with an automatic Halon 1301 fire suppression system that could be released both automatically and manually. During a maintenance activity in December, 2005, there was an accidental manual actuation and discharge of the Halon system. The licensee initiated CR 2005-33539 to document this incident, but the CR only addressed the accidental discharge of the system. The CR did not address the return of the Halon system to its intended design function nor did the CR evaluate the safety significance (from a fire protection standpoint) of the lack of an automatic fire suppression system in the room.

During 2006, activities were undertaken to attempt to obtain the necessary parts and components needed to replace and/or restore the Halon system to an operable status. There was also an effort to evaluate alternative automatic suppression systems for the Unit 1 CSR in lieu of the existing Halon system due to Halon's general decreased use for environmental considerations. Although these efforts were presented to the team by the licensee, there was no mechanism in place to formally track a systematic resolution of this issue. Additionally, there had been no engineering evaluation performed to determine the safety significance of the Halon fire suppression system being out of service for an extended period of time.

Section 7.0 in Appendix 9.5A of the Unit 1 UFSAR addresses the FPP administrative controls. Section 7.5 addresses the inspection and testing requirements of the fire protection program and specifically lists the RAB Cable Spreading Room Halon System as a plant fire protection feature that is subject to periodic tests and inspections. Section 7.5 further stated that remedial actions be taken for equipment out of service, including fire suppression equipment, and remedial actions would include compensatory measures to ensure equivalent level of fire protection in addition to timely efforts to effect repairs and restore equipment to service.

As part of its immediate compensatory measures, the licensee had posted a continuous fire watch in the Unit 1 CSR in accordance with provisions of its FPP. Communication that the Halon system was out of service was made to operations personnel and the station fire brigade through daily operations and shift turnover briefings. The Unit 1 CSR was also equipped with an automatic fire detection system. However, there was no evidence of actions or measures to evaluate the CSR to ensure an equivalent level of fire protection due to the automatic Halon suppression system being out of service for an extended period of time. Additionally, there was no evidence of timely efforts to effect repairs to this system and restore it to service, given the stated risk significance of a postulated Unit 1 CSR fire (PSL Individual Plant Examination of External Events). The fire fighting strategy procedure for the Unit 1 CSR had not been changed or annotated to reflect the Halon system being out of service. None of the plant hardware components associated with the Halon system were tagged or labeled to state that the system was out of service.

During the inspection, the licensee generated CRs 2006-25892 and 2006-30034 to track the resolution of this issue in its corrective action program. Also, labels were applied to the Halon manual actuation release stations to inform plant personnel that actuation of those devices would not result in a release of Halon into the room.

Analysis: This finding is a performance deficiency because the licensee did not comply with its FPP for the out of service Unit 1 CSR Halon automatic fire suppression system with regard to timely efforts to effect repairs and return the system to service. The finding is more than minor because it is associated with the reactor safety, mitigating systems, cornerstone attribute of protection against external factors, i.e. fire, and it affected the objective of ensuring reliability and capability of systems that respond to initiating events.

Enforcement: 10 CFR 50.48 states, in part, that each operating nuclear power plant must have a fire protection program that satisfies Criterion 3 of 10 CFR 50, Appendix A. Unit 1 Renewed Facility Operating License DPR-37, Condition 3.E. states, in part, that the licensee shall implement and maintain in effect all provisions of the approved FPP as described in the UFSAR for the facility, and, as approved by various NRC Safety Evaluation Reports. The approved Unit 1 FPP is maintained and documented in the PSL Unit 1 UFSAR, Appendix 9.5A, Fire Protection Program Report.

Section 7.5 of UFSAR Appendix 9.5A specifies, in part, that as conditions warrant, remedial actions for equipment out of service would include compensatory measures to ensure equivalent level of fire protection in addition to timely efforts to effect repairs and restore equipment to service.

Contrary to the above, licensee actions in place at the time of this inspection did not demonstrate timely efforts to effect repairs and restore the equipment to service. Specifically, the Halon 1301 automatic fire suppression system in the Unit 1 CSR has been out of service since accidentally discharging in December, 2005. Additionally, there was no evidence of actions to evaluate the CSR to ensure an equivalent level of fire protection due to the automatic Halon suppression system being out of service for an extended period of time. The licensee generated CRs 2006-25892 and 2006-30034 to track resolution of this issue in its corrective action program.

Pursuant to the Commission's Enforcement Policy and NRC Manual Chapter 0305, under certain conditions fire protection findings at nuclear power plants that transition their licensing bases to 10 CFR 50.48(c) are eligible for enforcement and ROP discretion. The Enforcement Policy and ROP also state that the finding must not be evaluated as Red. On December 22, 2005, the licensee submitted a letter to the NRC stating its intent to transition to 10 CFR 50.48(c).

Because the licensee committed, prior to December 31, 2005, to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), this issue is being reviewed to determine if it is covered by enforcement discretion in accordance with the NRC Enforcement Policy, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." Specifically, the licensee's actions in place at the time of this inspection did not demonstrate timely efforts to effect repairs and restore the equipment to service, commensurate with the risk significance of the issue. This issue will be tracked as URI 05000335/2006010-01, Cable Spreading Room Automatic Halon Suppression System Out of Service.

.05 Protection from Damage from Fire Suppression Activities

a. Inspection Scope

The team walked down the selected fire areas to verify that redundant trains of systems required for hot shutdown, where located in the same fire area, were not subject to damage from fire suppression activities or from the rupture, or inadvertent operation of, fire suppression systems. The team considered the effects of water, drainage, heat, hot gasses, and smoke that could potentially damage all redundant trains. The team also reviewed engineering evaluations that addressed the inadvertent operation of fire protection systems and their effect on safety-related systems or components.

b. Findings

No findings of significance were identified.

.06 Alternative Shutdown Capability

The FA/FZ selected for inspection which utilizes alternative shutdown capability from outside the MCR (FA B/FZ 57) is discussed in Section 1R05.01 of this inspection report.

.07 Circuit Analyses

This segment is suspended for plants in transition to NFPA 805.

.08 Communications

a. Inspection Scope

The team reviewed plant communication capabilities to evaluate the availability of the communication systems to support plant personnel in the performance of local operator manual actions to achieve and maintain SSD conditions. During this review, the team considered the effects of ambient noise levels, clarity of reception, and reliability. The team also reviewed the communications available at different locations. Both fixed and portable communication systems were reviewed for the impact of fire damage in the selected fire areas/zones. A review was performed to verify the availability of the portable radios for use during the SSD procedures. In addition, the team reviewed the radio battery usage ratings for the radios stored and maintained on charging stations for operator use while performing the SSD procedure. The team also reviewed preventative maintenance and surveillance test records to verify that the communication equipment was being properly maintained.

The team reviewed the plant communications systems that would be relied upon to support fire event notification and fire brigade fire fighting activities to verify their availability. The team also reviewed selected fire brigade drill evaluation/critique reports to assess proper operation and effectiveness of the fire brigade command post portable radio communications during fire drills and identify any history of operational or performance problems with radio communications during fire drills. In addition, the team reviewed the radio battery usage ratings for the fire brigade radios stored and maintained on charging stations to verify their availability.

b. Findings

Sound powered phones surveillance test not performed as required by the FPP

Introduction: A Green NCV was identified for failure to perform surveillance tests on the sound powered phone system in accordance with the approved FPP.

Description: The sound powered phones are credited in the Unit 1 FPP (UFSAR Appendix 9.5A) for use during performance of the SSD procedures in the event of a postulated fire in certain fire areas. Section 7.5 of Appendix 9.5A discussed the inspection and testing requirements of the fire protection program and listed communications as being subject to periodic inspections and/or testing.



The team requested completed surveillance test procedures for the sound powered phones for the last three years. While gathering the requested information, the licensee identified that the annual surveillance test procedure for the sound powered phones OP-1-0010125A, Schedule of Periodic Tests, Checks, and Calibrations, had not been performed since July 2004. The licensee initiated CR 2006-28784 to address this issue and immediately performed the missed surveillance test. During performance of the surveillance test the licensee identified several anomalies. In some instances, depending on the circuit being tested, the sound powered phones did not work or the licensee could hear but could not transmit information. The licensee initiated CR 2006-29158 to address this issue and corrected the different anomalies. The surveillance test was successfully performed during this inspection.

Analysis: This issue is a performance deficiency because one of the communication systems credited in the FPP was not being tested annually in accordance with plant procedures. The team determined that the finding is greater than minor because when the licensee initially performed the missed surveillance test, some of the sound powered phones did not work. This issue also affects the ability of the licensee to maintain the communications system and is associated with the mitigating systems cornerstone and its respective attribute of protection against external factors, i.e., fire. The team determined that this finding was of very low safety significance (Green) because other communications systems (i.e., radios) credited in the FPP were verified to be available.

Enforcement: St. Lucie Unit 1 Operating License Condition 3.E requires that the licensee implement and maintain in effect all provisions of the approved FPP as described in the UFSAR, and as approved by various NRC Safety Evaluation Reports. The approved FPP is maintained and documented in the Unit 1 UFSAR, Appendix 9.5A, Fire Protection Program Report. Section 7.5 of Appendix 9.5A discusses the inspection and testing requirements of the fire protection program and listed communications as being subject to periodic inspections and/or testing. Surveillance Procedure OP-1-0010125A, Schedule of Periodic Tests, Checks, and Calibrations, implements the annual surveillance test of the sound powered phones credited for post-fire SSD.

Contrary to the above, on October 9, 2006, in response to an NRC request, the licensee identified that the annual surveillance test (OP-1-0010125A) of the sound powered phones credited in the Unit 1 post-fire SSD procedures had not been performed since July 2004. This condition existed from October 2005 (when the annual surveillance test plus 25% grace period was required to be performed) until the test was successfully performed in October 2006. The licensee initiated CRs 2006-28784 and 2006-29158 to address the missed surveillance test and to correct deficiencies identified during initial performance of the missed surveillance test. This violation is being treated as a NCV, consistent with Section VI.A.1 of the NRC Enforcement Policy, and is identified as NCV 05000335/2006010-02, Failure to Test the Sound Powered Phones as Required by the Fire Protection Program.

.09 Emergency Lighting

a. Inspection Scope

The team observed the placement and coverage area of fixed eight-hour battery pack emergency lights throughout the selected fire areas to evaluate their adequacy for illuminating access and egress pathways and any equipment requiring local operation and/or instrumentation monitoring for post fire safe shutdown. The team also reviewed the battery power supplies to verify they were rated for at least an eight-hour capacity.

The team also reviewed the availability of the portable eight-hour battery powered emergency lights located in storage lockers throughout the plant. The portable eight-hour battery powered emergency lights are credited in the licensee FPP for use during the performance of operator manual actions in outdoor areas, and for access and egress routes.

Preventive maintenance procedures and completed surveillance tests were reviewed to ensure adequate surveillance testing and periodic battery replacements were in place to ensure reliable operation of the fixed and portable emergency lights. The team reviewed vendor manuals to ensure that the emergency lights were being maintained consistent with the manufacturer's recommendations.

The team also observed whether emergency exit lighting was provided for personnel evacuation pathways to the outside exits as identified in the NFPA 101, Life Safety Code, and the Occupational Safety and Health Administration (OSHA) Part 1910, Occupational Safety and Health Standards. This review also included examination of whether backup emergency lighting units were provided for the primary and secondary fire emergency equipment storage locker locations and dress-out areas in support of fire brigade operations should power fail during a fire emergency.

b. Findings

Portable emergency lights not tested as required by the FPP

Introduction. The team identified a Green NCV of the FPP for the licensee's failure to perform surveillance tests on the eight-hour battery powered portable emergency lighting units.

Description. The Unit 1 FPP (UFSAR Appendix 9.5A) credits the use of fixed and portable eight-hour battery powered emergency lights during the performance of post-fire SSD procedures. Section 7.5 of Appendix 9.5A discussed the inspection and testing requirements of the fire protection program and listed emergency lighting as being subjected to periodic inspections and/or testing.

The team requested the completed eight-hour discharge test procedures for both the fixed and portable eight-hour emergency lights for the last three years. The licensee provided the eight hour discharge test for the fixed eight-hour emergency lights. However, the licensee identified that they did not have a surveillance test procedure for the portable eight-hour battery powered emergency lights. The licensee further stated that a battery discharge test had never been performed to demonstrate the eight-hour battery capability of the portable emergency lights. The licensee initiated CR 2006-29459 to address this issue. The team noted that the licensee performed weekly checks (in accordance with procedure 1-OSP-100.02 Schedule of Tests, Checks and Calibrations) to verify that the correct number of portable emergency lights were stored in the appropriate location and to verify that they would illuminate.

Analysis. This issue is a performance deficiency because the licensee did not performed an eight hour discharge test for the portable eight hour battery powered emergency lights as required by the FPP. The finding is more than minor because it is associated with the reactor safety, mitigating systems, cornerstone attribute of protection against external factors (i.e., fire) and it affects the objective of ensuring reliability and capability of systems that respond to initiating events. The team determined that this finding was of very low safety significance (Green) because the operators had a high likelihood of completing the task using flashlights.

Enforcement: St. Lucie Unit 1 Operating License Condition 3.E requires that the licensee implement and maintain in effect all provisions of the approved FPP as described in the UFSAR, and as approved by various NRC Safety Evaluation Reports. The approved FPP is maintained and documented in the Unit 1 UFSAR, Appendix 9.5A, Fire Protection Program Report. Section 7.5 of Appendix 9.5A discusses the inspection and testing requirements of the fire protection program and listed emergency lights as being subject to periodic inspections and/or testing.

Contrary to the above, on October 16, 2006, in response to an NRC request, the licensee identified that an eight-hour discharge test procedure had not been performed for the portable emergency lights to demonstrate the eight hour capability. This condition has existed since before 1998. The licensee initiated CR 2006-29459 to address this issue.

Pursuant to the Commission's Enforcement Policy and NRC Manual Chapter 0305, under certain conditions fire protection findings at nuclear power plants that transition their licensing bases to 10 CFR 50.48(c) are eligible for enforcement and ROP discretion. The Enforcement Policy and ROP also state that the finding must not be evaluated as Red. On December 22, 2005, the licensee submitted a letter to the NRC stating its intent to transition to 10 CFR 50.48(c).

Because the licensee committed, prior to December 31, 2005, to adopt NFPA 805 and change their fire protection licensing bases to comply with 10 CFR 50.48(c), the NRC is exercising enforcement discretion for this issue in accordance with the NRC Enforcement Policy, "Interim Enforcement Policy Regarding Enforcement Discretion for Certain Fire Protection Issues (10 CFR 50.48)." Specifically, this issue would have been

Enclosure

expected to be identified and addressed during the licensee's transition to NFPA 805, was entered into the licensee's corrective action program and will be corrected, was not likely to have been previously identified by routine licensee efforts, was not willful, and was not associated with a finding of high safety significance.

.10 Cold Shutdown Repairs

a. Inspection Scope

The team reviewed the licensee's methodology for cold shutdown to determine the adequacy of the identified procedures, equipment, and materials used to achieve and maintain cold shutdown conditions.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team reviewed the administrative controls for out-of-service, degraded, and/or inoperable, fire protection features (e.g., detection and suppression systems and equipment, passive fire barriers, or pumps, valves or electrical devices providing post-fire SSD functions or capabilities). The team reviewed selected items on the fire protection impairment report and compared them with the fire areas/zones selected for inspection. The compensatory measures that had been established in these areas/zones were compared to those specified for the applicable fire protection feature to verify that the risk associated with removing the fire protection feature from service was properly assessed and adequate compensatory measures were implemented in accordance with the approved FPP. Additionally, the team reviewed the licensee's short term compensatory measures (compensatory fire watches) to verify that they were adequate to compensate for a degraded function or feature until appropriate corrective action could be taken and that the licensee was effective in returning the equipment to service in a reasonable period of time.

b. Findings

An unresolved item related to the licensee's failure to comply with the Unit 1 FPP for the out of service Halon automatic fire suppression system in the Unit 1 CSR is discussed in Section 1R05.04 of this inspection report. No other findings of significance were identified.

#### 4. OTHER ACTIVITIES

##### 4OA2 Identification and Resolution of Problems

###### a. Inspection Scope

The team reviewed selected licensee audits, self assessments, and CRs to verify that items related to fire protection and SSD were appropriately entered into the licensee's corrective action program in accordance with the licensee's quality assurance program and procedural requirements. This review included CRs related to fire protection and post-fire SSD. The team also reviewed other corrective action program documents, including work requests, work orders, and operating experience program (OEP) documents to verify that industry-identified fire protection issues were entered into the corrective action program and reviewed for applicability to PSL. Items included in the OEP effectiveness review were NRC generic letters, regulatory issue summaries, and information notices. The inspectors evaluated the effectiveness of the corrective actions for a sample of identified issues. The documents reviewed are listed in the Attachment.

###### b. Findings

No findings of significance were identified.

##### 4OA6 Meetings, Including Exit

On October 20, 2006, the lead inspector presented the inspection results to Mr. C. Costanzo and other members of the licensee's staff. Following completion of additional review in the Region II office, a final exit was held by telephone with Mr. R. Hughes and other members of the licensee's staff on December 4, 2006, to provide an update on changes to the preliminary inspection findings. Proprietary information is not included in this report.

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### Licensee Personnel

E. Armando, Site Quality Manager  
P. Barnes, Mechanical Supervisor, Design Engineering  
D. Cecchett, Licensing Engineer  
R. Conrad, Fire Protection Engineer, Design Engineering  
C. Costanzo, Plant General Manager  
R. Dorst, Fire Protection  
K. Frehafer, Licensing Engineer  
D. Fuca, Quality Supervisor  
R. Hughes, Site Engineering Manager  
E. Katzman, Performance Improvement Manager  
R. McDaniel, Fire Protection Supervisor  
L. Neely, Work Control Manager  
W. Parks, Operations Manager  
T. Patterson, Licensing Manager  
J. Porter, Design Engineering Manager  
V. Rubano, Engineering Fire Protection Chief Engineer  
S. Short, Electrical Supervisor, Design Engineering

#### NRC Personnel

L. Bradford, Nuclear Safety Professional Development Program (Trainee)  
T. Hoeg, Senior Resident Inspector  
D. Payne, Chief, Engineering Branch 2, Division of Reactor Safety, Region II  
S. Sanchez, Resident Inspector

### **LIST OF ITEMS OPENED, CLOSED AND DISCUSSED**

#### Opened

05000335/2006010-01      URI      Cable Spreading Room Automatic Halon Suppression System Out of Service (Section 1R05.04)

#### Opened and Closed

05000335/2006010-02      NCV      Failure to Test the Sound Powered Phones in Accordance With Surveillance Procedures (Section 1R05.08)

#### Closed

None

## LIST OF DOCUMENTS REVIEWED

### Procedures

0-OSP-15.14, Fire Protection System Annual Valve Cycle, Rev. 4B  
 1-IMP-09.10L, Feedwater Regulating Sys Cal and Functional Testing St. Lucie Unit 1, Rev. 6  
 1-IMP-09.11L, Lower Power Feedwater System Calibration St. Lucie Unit 1, Rev. 4  
 1-ONP-100.01, Response to Fire, Rev. 19  
 1-ONP-100.02, Control Room Inaccessibility, Rev. 16A  
 1-OSP-100.02, Weekly Schedule of Periodic Tests, Checks and Calibrations, Rev. 31A  
 1-OSP-100.15, Remote Shutdown Monitoring Monthly Channel Check, Rev. 17A  
 1-OSP-100.16, Remote Shutdown Monitoring Monthly Channel Check, Rev. 1A  
 ADM-27.11, Scaffold Control, Rev. 6  
 AP-1800022, Fire Protection Plan, Rev. 40  
 AP-1-1800023, Unit 1 Fire Fighting Strategies, Rev. 22A  
 AP-0010434, Plant Fire Protection Guidelines, Rev. 39  
 AP-0005729, Fire Protection Training, Qualification and Requalification, Rev. 17C  
 AP-0010239, Fire Protection System Impairment, Rev. 14B  
 EMP-50.10, Self-contained Emergency Lights Unit Maintenance and Inspection, Rev. 12A  
 EMP-100.27, Inspection and Control of Temporary Power and Lighting, Rev. 0A  
 FPSP-15.01, Fire Barrier Inspection, Rev. 0A  
 IMP-15.01, Smoke Detector Testing, Rev. 10  
 NOP-99.02, Watchstation General Inspection Guidelines, Rev. 3A  
 OP-1-0010125, Schedule of Periodic Tests, Checks and Calibrations, Check Sheet 11, Rev 67  
 OP-1-0010125A, Surveillance Data Sheet, Data Sheet 40 Operability Check of Sound Powered  
 Phone System, Rev. 101A

### Completed Surveillance Test Procedures

0-OSP-15.17, Fire Protection System Triennial Flow Test, Rev. 1B, completed 4/14/2003  
 1-OSP-100.02, Schedule of Periodic Tests, Checks and Calibrations, completed 4/15/2006,  
 5/12/2006, 6/10/2006, 7/15/2006, 8/12/2006, 9/09/2006  
 EMP-50.10, Self-contained Emergency Lights Unit Maintenance and Inspection, App R Monthly  
 Inspection completed 9/29/2005, 12/28/2005, 2/24/2006, 6/12/2006  
 EMP-50.10, Self-contained Emergency Lights Unit Maintenance and Inspection, Eight Hour  
 Discharge Test, completed 8/12/2005, 12/28/2005, 2/24/2006, 6/01/2006  
 OSP-15.13A, 1A Fire Pump Monthly Operability Test, completed 10/4/2006  
 OSP-15.13B, 1B Fire Pump Monthly Operability Test, completed 9/20/2006  
 OSP-15.15A, 1A Fire Pump 18 Month Operability Test, completed 8/10/2005  
 OSP-15.15B, 1B Fire Pump 18 Month Operability Test, completed 8/10/2005

### List of Components Inspected

#### Unit 1 Fire Area B, Fire Zone 57

Fire pump 1A  
 Fire pump 1B

Charging pump 1B  
 Auxiliary feedwater pump 1A  
 Auxiliary feedwater pump 1B  
 Boric acid makeup pump 1A  
 Boric acid makeup pump 1B  
 LI-1110Y-1, Pressurizer level indication at the HSCP  
 LI-9022, Steam generator 1B level indication at the HSCP  
 LT-9006, Steam generator 1B NR level transmitter  
 PI-1104-1, Pressurizer pressure low range indication at the HSCP  
 PI-1100Y-1, Pressurizer pressure indication at the HSCP  
 TI-1125, Reactor coolant loop temperature indication at the HSCP  
 RI-26-80B4, Neutron flux indication at the HSCP

Fire Area C, Fire Zone 56

Charging pump 1A  
 Charging pump 1B  
 Fire pump 1A  
 Fire pump 1B  
 Auxiliary feedwater pump 1A  
 Auxiliary feedwater pump 1B  
 HCV-14-8A, CCW normal supply header isolation valve  
 HCV-14-9, CCW normal return header isolation valve  
 Boric acid makeup pump 1A

Unit 1 Fire Area O, Fire Zone 36

Fire pump 1A  
 Fire pump 1B  
 Auxiliary feedwater pump 1A  
 Auxiliary feedwater pump 1B  
 HCV-14-8A, CCW normal supply header isolation valve  
 HCV-14-9, CCW normal return header isolation valve  
 Boric acid makeup pump 1A

Calculations, Evaluations, and Specifications

8770-B-048, Unit 1 Appendix R Safe Shutdown Analysis, Rev. 16  
 8770-B-049, Unit 1 Essential Equipment List, Rev. 5  
 MN-3.21, Installation and Inspection Guidelines for Thermo-Lag Fire Barrier Material, Rev. 11  
 PSL-ENG-SEES-98-039, Evaluation of St. Lucie Plant 10 CFR 50, App R 8-Hour Battery-pack  
 Emergency Lighting Requirements, Rev. 3  
 PSL-ENG-SEMS-98-035, App R Validation St. Lucie Unit 1 Safe Shutdown Analysis, Rev. 2  
 PSL-FPER-96-002, Fire Protection Evaluation for TSI Walls, Floors and Ceilings, Rev. 3  
 PSL-FPER-97-026, Fire Protection Evaluation for Thermo-Lag Fire Barriers on Conduits  
 14885-3" and 14886-3", Rev. 0  
 PSL-FPER-97-028, Fire Protection Evaluation for Thermo-Lag Fire Barriers on Essential  
 Conduits 11002F-3" and 11002H-3", Rev. 0  
 PSL-FPER-99-010, Disposition of Unit 1 NFPA 13 Code Nonconformances, Rev. 1



PSL-FPER-99-011, Disposition of Unit 2 NFPA 13 Code Nonconformances, Rev. 1  
 PSL-FPER-99-012, Disposition of Unit 1 NFPA 15 Code Nonconformances, Rev. 1  
 PSL-FPER-00-003, Disposition of Unit 1 Fire Detection System Nonconformances, Rev. 1  
 ENG-05004-001, St. Lucie Unit 1 Penetration Schedule

#### Licensing Basis Documents

Unit 1 Technical Specifications 3.3.3.5, 4.3.3.5  
 Unit 1 UFSAR Appendix 9.5A, Fire Protection Program Report  
 Unit 1 UFSAR Section 9.5, Communications System  
 Unit 2 UFSAR Appendix 9.5A, Fire Protection Program Report  
 Appendix A to Branch Technical Position APCSB 9.5-1, "Guidelines for Fire Protection for  
 10 CFR 50, Appendix A, Criterion 3

#### Modification Packages

PC/M 00061, Automatic Sprinkler System Additions, Rev. 1  
 PC/M 97041, Thermo-Lag Conduit Fire Barrier Upgrades, Rev. 1  
 MEP 05004, Rework Sixteen (16) Gold Bond Penetration Seals in Unit 1, Rev. 1

#### Drawings

8770-B-326, CWD, Charging Pump 1C, Sheet 179, Rev. 26  
 8770-B-327, CWD, Charging Pump 1B, Sheet 178, Rev. 23  
 8770-B-327, CWD, Boric Acid Make-Up Pump 1A, Sheet 174, Rev. 8  
 8770-B-327, CWD, AFW Pump 1A, Sheet 629, Rev. 28  
 8770-B-327, CWD, AFW Pump 1B, Sheet 630, Rev. 28  
 8770-B-327, CWD, Normal Supply Hdr & Normal Return Hdr Isol. Valves, Sheet 202, Rev. 6  
 8770-B-327, CWD, Feedwater Regulating System 1A, Sheet 619, Rev. 22  
 8770-B-327, CWD, Feedwater Regulating System 1B, Sheet 624, Rev. 22  
 8770-B-327, CWD, Ex-Core Neutron Monitoring System Channel SB, Sheet 59, Rev. 3  
 8770-B-327, CWD, Rx Coolant Loop Temp. Ch. T-1121Y, T-1121X, T-1125, Sh. 137, Rev. 36  
 8770-B-327, CWD, Steam Generator 1A & 1B Level (Wide Range), Sheet 380, Rev. 7  
 8770-B-327, CWD, Pressurizer Pressure -CH-P-1100Y, Sheet 98, Rev. 12  
 8770-B-327, CWD, Pressurizer Pressure -CH-P-1100X, Sheet 97, Rev. 16  
 8770-B-327, CWD, Pressurizer Level CH-L-1100-1, Sheet 138, Rev. 17  
 8770-B-327, CWD, Fire Water Pump 1B, Sheet 853, Rev. 19  
 8770-B-327, CWD, Fire Water Pump 1A, Sheet 852, Rev. 14  
 8770-B-327, CWD, Reactor Head Seal P-1118 Quench Tank P-1116 Press, Sh. 141, Rev. 22  
 8770-B-327, CWD, SB Termination Cab to Isol Cab 3-SB Connections, Sheet 1517, Rev. 3  
 8770-G-078, Sheet 110A, Flow Diagram - Reactor Coolant System, Rev. 28  
 8770-G-078, Sheet 110B, Flow Diagram - Reactor Coolant System, Rev. 25  
 8770-G-078, Sheet 120A, Flow Diagram - Chemical and Volume Control System, Rev. 22  
 8770-G-078, Sheet 120B, Flow Diagram - Chemical and Volume Control System, Rev. 16  
 8770-G-078, Sheet 121A, Flow Diagram - Chemical and Volume Control System, Rev. 33  
 8770-G-078, Sheet 121B, Flow Diagram - Chemical and Volume Control System, Rev. 30  
 8770-G-078, Sheet 130A, Flow Diagram - Safety Injection System, Rev. 26

8770-G-078, Sheet 130B, Flow Diagram - Safety Injection System, Rev. 29  
 8770-G-078, Sheet 131A, Flow Diagram - Safety Injection System, Rev. 26  
 8770-G-078, Sheet 131B, Flow Diagram - Safety Injection System, Rev. 18  
 8770-G-079, Sheet 1, Flow Diagram - Main Steam System, Rev. 51  
 8770-G-079, Sheet 2, Flow Diagram - Main Steam System, Rev. 44  
 8770-G-079, Sheet 7, Flow Diagram - Main Steam System, Rev. 4  
 8770-G-080, Sheet 1, Flow Diagram - Condensate System, Rev. 62  
 8770-G-080, Sheet 2, Flow Diagram - Condensate System, Rev. 41  
 8770-G-080, Sheet 3, Flow Diagram - Feedwater & Condensate System, Rev. 51  
 8770-G-080, Sheet 4, Flow Diagram - Feedwater & Condensate System, Rev. 39  
 8770-G-080, Sheet 5, Flow Diagram - Main Feedwater System, Rev. 3  
 8770-G-082, Sheet 1, Flow Diagram - Circulating Water & Intake Cooling Water, Rev. 50  
 8770-G-082, Sheet 2, Flow Diagram - Circulating Water & Intake Cooling Water, Rev. 23  
 8770-G-083, Sheet 1A, Flow Diagram - Component Cooling System, Rev. 57  
 8770-G-083, Sheet 1B, Flow Diagram - Component Cooling System, Rev. 55  
 8770-G-083, Sheet 2, Flow Diagram - Component Cooling System, Rev. 3  
 8770-G-084, Sheet 1A, Flow Diagram - Fire Water, Domestic, and Make-up Systems, Rev. 50  
 8770-G-084, Sheet 1B, Flow Diagram - Domestic and Make-up Systems, Rev. 44  
 8770-G-084, Sheet 1C, Flow Diagram - Domestic and Make-up Systems, Rev. 43  
 8770-G-084, Sheet 2, Flow Diagram - Fire Protection System, Rev. 19  
 8770-G-084, Sheet 3, Flow Diagram - Fire Protection System, Rev. 10  
 8770-G-087, Sheet 1, Flow Diagram - Miscellaneous Systems, Rev. 38  
 8770-G-087, Sheet 2, Flow Diagram - Miscellaneous Systems, Rev. 38  
 8770-G-165, Sheet 1, Unit 1 Fire Protection St. Lucie Site Fire Boundaries, Rev. 7  
 8770-G-165, Sheet 2, Unit 1 Fire Protection Reactor Auxiliary Building El. 62.00' & Diesel Generator Building El. 22.67' Fire Doors, Dampers and Sprinkler System, Rev. 2  
 8770-G-165, Sheet 3, Unit 1 Fire Protection Reactor Auxiliary Building Fire Dampers, Fire Doors and Halon Suppression Areas - El 43.00', Rev. 3  
 8770-G-165, Sheet 4, Unit 1 Fire Prot. RX Aux Bldg Fire Doors and Dampers - El 19.50', Rev. 4  
 8770-G-165, Sheet 4A, Unit 1 Fire Protection RX Aux Bldg Fire Sprinklers El 19.50', Rev. 0  
 8770-G-165, Sheet 5, Unit 1 Fire Protection RX Aux Bldg El. -.50' Fire Sprinklers 19.50', Rev. 2  
 8770-G-165, Sheet 6, Unit 1 Fire Prot. RX Aux Bldg Fire Doors & Dampers - El. 19.50', Rev. 3  
 8770-G-424, Sheet 1, Unit 1 Fire Protection Reactor Auxiliary Building El. -.50' Conduit, Fire Detection and Emergency Lighting, Rev. 7 and Rev. 13  
 8770-G-424, Sheet 2, Unit 1 Fire Protection Reactor Auxiliary Building El. 19.50' Conduit, Fire Detection and Emergency Lighting, Rev. 9 and Rev. 16  
 8770-G-424, Sheet 3, Unit 1 Fire Protection Reactor Auxiliary Building El. 43.00' Conduit, Fire Detection and Emergency Lighting, Rev. 11 and Rev. 16  
 8770-G-424, Sheet 4, Unit 1 Fire Protection Reactor Auxiliary Building El. 19.50' and 43.00' Conduit, Fire Detection and Emergency Lighting, Rev. 9  
 8770-G-594, Sheet 10, Unit 1 Reactor Auxiliary Building Composite Penetrations Interior Fire Walls El. -5.00 and 43.00, Rev. 4  
 8770-14185, Fire Protection Sprinkler System, RAB - Grade Floor El. 19.50', Rev. 0  
 8770-14186, Fire Protection Sprinkler System, RAB - Concrete Deck El. 28.67', Rev. 0  
 8770-14187, Fire Protection Sprinkler System, RAB - 19.50' Isometric, Rev. 0  
 8770-14188, Fire Protection Sprinkler System, RAB - 28.67' Isometric, Rev. 0  
 8770-14191, Fire Protection Sprinkler System, RAB-B.O.M., Gen. Notes & Misc. Details, Rev. 0

### Vendor Technical Manuals and Information

Yuasa Battery Co., LTD Application Manual, Rev. 0  
 Dual Lite Spectron Series Emergency Lighting Equipment Instructions  
 Hazardous Area Emergency Lighting Units Installation and Operating Instructions, Rev. 1

### Fire Protection Exemptions

Exemption B1, Exterior Wall and Roof Penetrations  
 Exemption B2, Protection of Structural Steel Supports  
 Exemption C1, Exterior Wall and Roof Penetrations  
 Exemption C2, Hatch Cover Providing Fire Area Separation  
 Exemption C4, Protection of Structural Steel Supports  
 Exemption O2, Hatch Cover Providing Fire Area Separation  
 Exemption O, Hatch Cover Providing Fire Area Separation

### Miscellaneous Documents

St. Lucie Letter (No. L-2005-262) to NRC, dated 12/22/2005, St. Lucie Units 1 and 2, Docket Nos. 50-335 and 50-389, Letter of Intent to Adopt NFPA 805, Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants, 2001 Edition  
 NRC Letter dated 02/14/2006, NRC Response to Florida Power and Light Company's Letter of Intent to Adopt 10 CFR 50.48(c) (NFPA 805 Rule) for St. Lucie Nuclear Plant Units 1 and 2  
 NRC Regulatory Issues Summary 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements  
 NRC Regulatory Issues Summary 2006-10, Regulatory Expectations With Appendix R Paragraph III.G.2 Operator Manual Actions  
 NRC Information Notice 97-48, Inadequate or Inappropriate Interim Fire Protection Compensatory Measures  
 St. Lucie Units 1 & 2 Individual Plant Examination of External Events  
 NRC Administrative Letter 95-06, Relocation of Technical Specification Administrative Controls Related to Quality Assurance  
 8770-B-335, Power Distribution & Motor Data, Sheet 13, Rev. 11  
 51-9032374-001, Timeline and Manual Action Feasibility Report, dated 10/04/2006  
 Security Fire Watch Program - Power Point Training Presentation  
 Hot Work Fire Permits - Power Point Training Presentation  
 Unit 1 Announced Fire Drill - 43' RAB "B" Switchgear Room, completed 8/3/2006  
 Unit 1 Unannounced Fire Drill, Backshift - 43' RAB Cable Spreading Room, completed 8/9/2006  
 JPM 0821070, Perform RCO "B" Actions During CRI - Unit 1 Turbine Building, Rev. 12  
 JPM 0821071T, Perform SNPO Actions During CRI, Unit 1 RAB 19.5', EDG Rm 1A/1B, Rev. 13  
 JPM 0821099, Perform RCO "A" Actions Per CRI ONP, Appendix A Unit 1 HSCP, Rev. 13

### Condition Reports Reviewed During This Inspection

CR 1998-0180, Potential non-compliance with NFPA 14  
 CR 2003-0637, Combustible load and fire risk associated with silicon filled transformers  
 CR 2003-2368, Out of service fire protection equipment and compensatory measures location

CR 2003-2431, Several electrical cord near misses, lack of assured grounding program  
 CR 2003-3404, Appendix R SSA for Unit 2 reviewed to identify feasibility of manual actions  
 CR 2003-3443, Emergency lighting discrepancies during manual actions walkdown  
 CR 2003-3451, Suppression system and emer. lights not included in maintenance rule scope  
 CR 2003-3514, Areas that require spatial separation are not physically identified  
 CR 2004-1024, Use of Non-IEEE 383 qualified cable for repowering of Sub10 in PCM 02504  
 CR 2004-2128, HVE-12 shutdown ventilation problems in "B" SWGR room  
 CR 2004-13566, Incipient fire detection system alarms caused by diesel exhaust fumes  
 CR 2004-16621, Identification of possible rework issues on Unit 1 IFD cirrus fire panel  
 CR 2005-04029, 4160V Relaying and metering single failure vulnerability OE issue  
 CR 2005-22060, 1A fire pump monthly operability test  
 CR 2005-23331, Penetration sealing material has left grease like coating on cables  
 CR 2005-23633, Condition of fire detection notifier and control panel in Unit 2 control room  
 CR 2005-24614, Process for approved FPP changes not in accordance with industry standards  
 CR 2005-33539, Cable spread room halon activation  
 CR 2006-01232, Pressure switch for deluge system will not start during monthly surveillance  
 CR 2006-11091, Lack of insulation/Class A combustible mtls listed in FHA for Unit 1A Swgr Rm  
 CR 2006-20062, NRC Regulatory Issue Summary: Regulatory Expectations With Appendix R  
     Paragraph III.G.2 Operator Manual Actions  
 CR 2006-21058, Use of unspecified staples to attach 1-Hour rated Thermo-Lag to junction box  
 CR 2006-21084, No procedure for the installation or repair of Thermo-Lag  
 CR 2006-21329, Weakness #3 from quick hit FP self assessment, configuration management  
 CR 2006-25042, 1A fire pump scheduled to be taken out of service twice in same week

#### Condition Reports Generated as a Result of This Inspection

CR 2006-25892, Determine appropriate actions to resolve Unit 1 CSR Halon system actuation  
 CR 2006-28244, Conduit 11601B App R wrap not in SSA nor shown properly on Dwg  
 CR 2006-28257, Fire protection plan minimum number of detectors required for operability  
 CR 2006-28327, Unit 1 FZ 36 FHA steel hatches/thermo-lag stairwell encl not shown properly  
 CR 2006-28356, Revise Unit 1 UFSAR 9.5A, Sect 3.3.3 remove tamper device cover comment  
 CR 2006-28480, Procedure 1-ONP-100.02 S/G LI-9005 and LI-9006 unreliable for SSD  
 CR 2006-28511, Scaffold erected in A SWGR room partially obstructed an emergency light  
 CR 2006-28605, Combustibles improperly stored under east and west stairs at -0.5 elevation  
 CR 2006-28784, Missed non Tech Spec surveillance on Unit 1 for sound powered phones  
 CR 2006-28816, Sound powered phone system deficiencies surveillance OP-1-0010125A  
 CR 2006-29158, Clarify requirement for testing sound powered phones  
 CR 2006-29442, Eng. Eval. PSL-ENG-SEMS-98-035, Rev. 2 documentation update issues  
 CR 2006-29459, No 8-hour discharge test for portable hand held lights  
 CR 2006-29744, Inadequate update of ELU Eng. Eval. PSL-ENG-SEES-98-039, Rev. 3  
 CR 2006-29809, Discrepancy in PSL-FPER-99-011, Rev. 1  
 CR 2006-30034, Compensatory measure for cable spreading room Halon fire suppression system out of service less than equivalent level of fire protection