UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

July 19, 2007

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 INTEGRATED INSPECTION REPORT 05000335/2007003, 05000389/2007003

Dear Mr. Stall:

On June 30, 2007, the US Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection findings which were discussed on July 10, 2007, with Mr. Costanzo and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

This report documents one NRC identified finding of very low safety significance (Green). The finding was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because it is entered into your corrective action program, the NRC is treating the finding as a non-cited violation (NCV) consistent with Section VI.A.1 of the NRC Enforcement Policy. If you contest this NCV, you should provide a response within 30 days of the date of this inspection 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 facility.

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/

Michael E. Ernstes, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000335/2007003, 05000389/2007003
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

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Report to J. A. Stall from Michael E. Ernstes July 19, 2007

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT 05000335/2007003, 05000389/2007003

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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.:	05000335/2007003, 05000389/2007003
Licensee:	Florida Power & Light Company (FPL)
Facility:	St. Lucie Nuclear Plant, Units 1 & 2
Location:	6351 South Ocean Drive Jensen Beach, FL 34957
Dates:	April 1 - June 30, 2007
Inspectors:	T. Hoeg, Senior Resident Inspector S. Sanchez, Resident Inspector J. Quinones, Reactor Inspector (Section 4OA3) G. Kuzo, Senior Reactor Inspector (Sections 2OS1,2OS2) S. Vias, Senior Reactor Inspector (Section 4OA5.3) R. Taylor, Reactor Inspector (Section 4OA5.2)
Approved by:	Michael Ernstes Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2007-003, 05000389/2007-003; 04/01/2007 - 06/30/2007; St. Lucie Nuclear Plant, Units 1 & 2; Problem Identification and Resolution of Problems.

The report covered a 3-month period of inspection by resident inspectors and announced inspections by region based inspectors. One Green finding which was a non-cited violation (NCV) was identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using 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 inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to take timely and effective corrective actions to prevent recurrence of continued NRC-identified low oil levels in emergency core cooling system (ECCS) pump motors. The licensee entered the finding in their corrective action program for resolution as condition report 2007-5932.

  The finding is greater than minor in accordance with IMC 0612, Power Reactor Inspection Reports, "Appendix B, Issue Screening." Specifically, if this condition is left uncorrected, it would become a more significant safety concern because operations and maintenance personnel would not be aware of the vendor required oil levels for the various safety-related pumps and motors which could become out of specification and not noticed or remedied by the licensee. The finding was determined to be of very low safety significance because it did not represent an actual malfunction or inoperability of a safety-related pump or motor. This finding was related to the corrective action aspect of the problem identification and resolution cross-cutting area in the aspect of appropriate and timely corrective actions (MC 0305 aspect P. 1(d)). (Section 4OA2.2)

B. Licensee-Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 1 was in a refueling outage at the beginning of this inspection period. On May 30, 2007 Unit 1 reached full Rated Thermal Power (RTP) and operated at or near full RTP for the remainder of the inspection period. Unit 2 began the inspection period at full RTP and operated at or near full RTP for the entire inspection report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

During the weeks of June 4th and 11th, the inspectors reviewed and verified the status of licensee actions taken in accordance with their procedural requirements prior to the onset of hurricane season. The inspectors reviewed lessons learned and corrective actions taken from the 2006 hurricane season. The inspectors reviewed Administrative Procedure ADM-04.01, Hurricane Season Preparation, and performed site walkdowns to verify the licensee had made the required preparations. The inspectors performed reviews of plant exterior areas and risk significant systems vulnerable to high winds and hurricane conditions including the following:

- Unit 1 and 2 Turbine Buildings
- Unit 1 and 2 Intake Cooling Water (ICW) Pump Stations
- Unit 1 Component Cooling Water (CCW) Pump Station

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

.1 Partial Walkdowns

a. Inspection Scope

The inspectors conducted three partial equipment alignment verifications of the safety-related systems listed below to review the operability of required redundant trains or backup systems while the other trains were inoperable or out of service (OOS). The inspectors looked for any discrepancies that could impact the function of the system, and therefore, potentially increase risk. These inspections included reviews of applicable Technical Specifications (TS), plant lineup procedures, operating procedures, and piping and instrumentation drawings (P&ID), which were compared with observed equipment configurations. The inspectors also reviewed applicable reactor control

operator (RCO) logs; equipment out of service (OOS) and operator workaround (OWA) lists; active temporary system alterations (TSA); and outstanding condition reports (CRs) regarding system alignment and operability.

- Unit 1 Spent Fuel Pool Cooling System
- 1A Emergency Diesel Generator (EDG)
- 1A Auxiliary Feedwater (AFW) System

b. Findings

No findings of significance were identified.

.2 Complete Walkdown

a. Inspection Scope

The inspectors performed a detailed alignment verification of the 2A EDG system using applicable equipment lineup sheets and system training guides to walkdown and verify equipment alignment. The inspectors reviewed relevant portions of the Updated Final Safety Analysis Report (UFSAR) and TS. This detailed walkdown also verified electrical power requirements, component labeling, and associated support systems status. The inspectors also included evaluation of selected system components to verify that: 1) wiring and terminal board assemblies did not show evidence of wear; 2) electrical cabinet meters and indications were normal; 3) component foundations were not degraded. Furthermore, the inspectors examined OOS lists; active open work orders (WO); the emergency diesel generator system health report; and open CRs that could affect system alignment and operability.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection - Tours

a. Inspection Scope

The inspectors conducted tours of the nine areas listed below to verify they conformed with licensee procedure AP-1800022, Fire Protection Plan. The inspectors specifically examined any transient combustibles in the areas and any ongoing hot work or other potential ignition sources. The inspectors also assessed whether the material condition, operational status, and operational lineup of fire protection systems, equipment and features were in accordance with the Fire Protection Plan. Furthermore, the inspectors evaluated the use of any compensatory measures being performed in accordance with the licensee's procedures and Fire Protection Plan.

- Unit 1 containment building
- Unit 1 spent fuel pool building 48' elevation
- Unit 2 ICW pump rooms
- Unit 1 AFW pump areas
- Unit 1 steam trestle 41' elevation
- Unit 1 control room
- Technical Support Center
- Unit 2 engineered safety features pump room
- Unit 1 engineered safety features pump room

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors reviewed UFSAR Section 3.4, Water Level (Flood) Design and UFSAR Table 3.2-1, Design Classification of Structures, System and Components for the Unit 2 engineered safety features pump room. Equipment affected by a flood in this room included High Pressure Safety Injection (HPSI), Low Pressure Safety Injection (LPSI), and Containment Spray (CS). The inspectors also reviewed procedure 1-ONP-24.01, Reactor Auxiliary Building Flooding, and verified certain actions required to be taken could be accomplished as written. The inspectors reviewed the Unit 2 engineered safety features pump room sump level indication and control system preventative maintenance (PM) schedule. The inspectors also verified the corrective action program (CAP) was being used to identify equipment issues that could be impacted by potential internal flooding.

b. Findings

No findings of significance were identified.

.2 External Flooding

a. Inspection Scope

The inspectors reviewed lessons learned from previous hurricane events at St. Lucie including the control of heavy winds and rains. The inspectors performed detailed walkdowns of Unit 1 and Unit 2 19.5' elevation auxiliary building outside door penetrations, AFW pump areas, ICW pump areas and reviewed the applicable UFSAR section for flooding including specific plant design features to accommodate the maximum flood level. The inspectors reviewed UFSAR Section 13.8.2.3.1 requirements for beach dune inspections and verified the inspections were completed as required.

The inspectors also reviewed ADM-04.01, Hurricane Season Preparation, with regard to protective actions to prevent excessive flooding in the AFW Pump area; and reviewed AP-0005753, Severe Weather Preparations, with regard to potential external flooding issues.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

Annual Inspection

a. Inspection Scope

During the week of April 22, 2007, the inspectors observed tube cleaning and plugging activities on the 1B CCW heat exchanger in accordance with MMP-14.01, CCW Heat Exchanger Cleaning And Repair. The inspectors also witnessed Eddy Current Testing (ECT) of the 1B CCW heat exchanger and reviewed applicable ECT procedures. Furthermore, the inspectors also interviewed the responsible system engineer, reviewed FPL Specification 81, Tube Plugging Criteria, and examined applicable work order packages to verify the total number of plugged tubes were within analyzed limits for the 1B CCW heat exchanger. In addition, the inspectors review of the records and documentation indicated that the frequency of inspection was sufficient to detect degradation to ensure TS operability prior to loss of heat removal capabilities below design basis values.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

Resident Inspector Quarterly Review

a. Inspection Scope

On June 26, 2007, the inspectors observed and assessed licensed operator actions during a simulated station blackout event to verify that operator performance was adequate and that evaluators were identifying and documenting crew performance problems. The inspectors also reviewed simulator physical fidelity and specifically evaluated the following attributes related to the operating crews' performance:

- Clarity and formality of communication
- Prioritization, interpretation, and verification of alarms
- Control board operation and manipulation, including high-risk operator actions

- Oversight and direction provided by operations supervision, including ability to identify and implement appropriate TS actions, regulatory reporting requirements, and emergency plan actions and notifications
- Effectiveness of the post-evaluation critique

b. Findings

No findings of significance were identified.

1R12 Maintenance Effectiveness

Quarterly Evaluation

a. Inspection Scope

The inspectors reviewed the reliability and deficiencies associated with the two systems listed below, including associated CRs. The inspectors verified the licensee's maintenance effectiveness efforts met the requirements of 10 CFR 50.65 and licensee Administrative Procedure ADM-17.08, Implementation of 10 CFR 50.65, Maintenance Rule. The inspectors focused on the licensee's system functional failure determination, a(1) and a(2) classification determination, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also attended applicable expert panel meetings, and interviewed responsible engineers. The inspectors reviewed associated system health reports, and the licensee's goal setting and monitoring requirements.

- Unit 2 Intake Cooling Water System
- Unit 1 High Pressure Safety Injection System

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the risk assessments for the following six Systems, Structures, and Components (SSCs), or a combination thereof, that were non-functional due to planned and/or emergent work. The inspectors also walked down and/or reviewed the scope of work to evaluate the effectiveness of licensee scheduling, configuration control, and management of online risk in accordance with 10 CFR 50.65(a)(4) and applicable licensee program procedure ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors interviewed responsible Senior Reactor Operators on-shift, verified actual system configurations, and specifically evaluated results from the online risk monitor (OLRM) for the combinations of OOS risk significant SSCs listed below:

- Ultimate heat sink barrier valve SB-37-1 OOS during Unit 2 ECCS pump venting
- Unit 2 ECCS exhaust fan HVE-9A OOS during 2A containment spray pump surveillance test
- 1A AFW pump and 1A containment spray pump OOS
- 1B EDG OOS during ECCS sump suction valve 1-MV-07-2A stroke testing
- 1A EDG with 1A charging pump OOS
- 1B EDG, 1B HPSI pump, and 1B LPSI pump OOS

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following five CR interim dispositions and operability determinations to ensure that operability was properly supported and the affected SSCs remained available to perform its safety function with no increase in risk. The inspectors reviewed the applicable UFSAR, and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- CR 2007-9459, 1A component cooling water heat exchanger shell leak
- CR 2007-12167, 1B low pressure safety injection pump seal leak
- CR 2007-9592, Unit 1 pressurizer spray control valve leaking by its seat
- CR 2007-14059, Ultimate heat sink valve SB-37-2 failed stroke test
- CR 2006-26155, Unit 1 control element assembly (CEA) 75 position indication

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed licensee procedures QI-3-PSL-1, Design Control, ENG-QI-1.7, Design Input Verification, ADM-17.11, 10 CFR 50.59 Screening, and observed part of the licensee's activities to implement a design change that upgraded Unit 1 containment ECCS sump. The inspectors reviewed the associated 10 CFR 50.59 screening against the system design basis documents to verify that the modifications had not affected system operability and availability. The inspectors reviewed selected ongoing and completed work activities to verify that installation was consistent with design control documents.

- Plant Change/Modification (PC/M) 06138, Containment ECCS Sump Upgrade-Resolution to Generic Letter 2004-02, Rev.1

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors witnessed and reviewed Work Order (WO) post maintenance test (PMT) activities of the five risk significant SSCs listed below. The following aspects were inspected: (1) Effect of testing on the plant recognized and addressed by control room and/or engineering personnel; (2) Testing consistent with maintenance performed; (3) Acceptance criteria demonstrated operational readiness consistent with design and licensing basis documents such as TS, UFSAR, and others; (4) Range, accuracy and calibration of test equipment; (5) Step by step compliance with test procedures and/or work orders (WO), and applicable prerequisites satisfied; (6) Control of installed jumpers or lifted leads; (7) Removal of test equipment; and, (8) Restoration of SSCs to operable status. The inspectors also reviewed problems associated with PMTs that were identified and entered into the licensee's CAP.

- WO 35029145, Unit 1 auxiliary load shed relay replacement
- WO 37010605, Containment air cooler HVS-1A relay replacement
- WO 33003752, 1A EDG lubrication oil soakback pump check valve replacement
- WO 36027359, 1B LPSI pump seal replacement
- WO 37006448, 1B charging pump accumulator PM

b. Findings

No findings of significance were identified.

1R20 Refueling and Other Outage Activities

a. Inspection Scope

Outage Planning, Control and Risk Assessment

During pre-outage planning, the inspectors reviewed the risk reduction methodology employed by the licensee for SL1-21, in particular the Risk Assessment Team (RAT) notebook. The inspectors also examined the licensee's implementation of shutdown safety assessments during SL1-21 in accordance with Administrative Procedure 0-AP-010526, Outage Risk Assessment and Control, to verify whether a defense in depth concept was in place to ensure safe operations and avoid unnecessary risk. Furthermore, the inspectors regularly monitored outage planning and control activities in the Outage Control Center (OCC), and interviewed responsible OCC management, during the outage to ensure SSC configurations and work scope were consistent with TS requirements, site procedures, and outage risk controls.

Monitoring of Shutdown Activities

The inspectors observed portions of the reactor plant shutdown and cooldown of Unit 1 beginning on April 2, 2007. The inspectors also monitored plant parameters and verified that shutdown activities were conducted in accordance with TS and applicable operating procedures, such as: 1-GOP-123, Turbine Shutdown - Full Load to Zero Load; 1-GOP-203, Reactor Shutdown; 1-GOP-305, Reactor Plant Cooldown - Hot Standby To Cold Shutdown; and 1-NOP-03.05, Shutdown Cooling.

Outage Activities

The inspectors examined outage activities to verify that they were conducted in accordance with TS, licensee procedures, and the licensee's outage risk control plan. Some of the more significant inspection activities accomplished by the inspectors were as follows:

- Walked down selected safety-related equipment clearance orders
- Verified operability of RCS pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Reviewed actions taken in preparation for Hurricane season
- Verified shutdown cooling system and spent fuel pool cooling system operation
- Evaluated implementation of reactivity controls
- Reviewed control of containment penetrations
- Examined FME controls put in place inside containment (e.g., around the refueling cavity, near sensitive equipment and RCS breaches) and around the spent fuel pool (SFP)
- Walked down the new containment sump modification

Review of Operating Experience Smart Sample (OPESS) FY2007-03, Crane and Heavy Lift Inspection, Supplemental Guidance for IP-71111.20

The inspectors performed an operating experience smart sample in the area of handling of heavy loads. The inspectors reviewed selected heavy lifting evolutions in the containment building. Specifically, the inspectors observed and reviewed licensee procedures, equipment, and personnel qualifications used in the rigging and lifting of the reactor vessel head.

Refueling Activities and Containment Closure

The inspectors witnessed selected fuel handling operations being performed according to TS and applicable operating procedures from the main control room, refueling cavity inside containment and the SFP. The inspectors also examined licensee activities to control and track the position of each fuel assembly. Furthermore, the inspectors evaluated the licensee's ability to close the containment equipment, personnel, and emergency hatches in a timely manner per procedure 1-MMP-68.02, Containment Closure.

Heatup, Mode Transition, and Reactor Startup Activities

The inspectors examined selected TS, license conditions, license commitments and verified administrative prerequisites were being met prior to mode changes. The inspectors also reviewed measured RCS leakage rates, and verified containment integrity was properly established. The inspectors performed a containment sump closeout inspection prior to plant heat up operations. The inspectors also conducted a containment walkdown on May 25, 2007, after the Unit 1 reactor plant had reached Mode 3 and was at normal operating pressure and temperature. The results of low power physics testing were discussed with Reactor Engineering and Operations personnel to ensure that the core operating limit parameters were consistent with the design. The inspectors witnessed portions of the RCS heatup, reactor startup and power ascension in accordance with the following plant procedures:

- Pre-operational Test Procedure (POP) 1-3200088
- Unit 1 Initial Criticality Following Refueling
- POP 0-3200092, Reactor Engineering Power Ascension Program
- 1-GOP-201, Reactor Plant Startup - Mode 2 to Mode 1
- 1-GOP-302, Reactor Plant Startup - Mode 3 to Mode 2
- 1-GOP-303, Reactor Plant Heatup - Mode 3 <1750 to Mode 3 >1750
- 1-GOP-403, Reactor Plant Heatup - Mode 4 to Mode 3
- 1-GOP-504, Reactor Plant Heatup - Mode 5 to Mode 4

Corrective Action Program

The inspectors reviewed CRs generated during SL1-20 to evaluate the licensee's threshold for initiating CRs. The inspectors reviewed CRs to verify priorities, mode holds, and significance levels were assigned as required. Resolution and implementation of corrective actions of several CRs were also reviewed for completeness. The inspectors routinely reviewed the results of Quality Assurance (QA) daily surveillances of outage activities.

b. Findings

No findings of significance were identified. However, on May 4, 2007, the inspectors identified that lifting heavy loads with the polar crane in the containment building was controlled by procedures which did not limit the maximum vertical height that the reactor vessel head could be raised above the reactor vessel during refueling maintenance. The inspectors reviewed St. Lucie's response to NUREG 0612, Control of Heavy Loads, transmitted in FPL to NRC Letter 81-428, dated September 30, 1981. The FPL response stated that St. Lucie would not perform a load drop analysis since they felt it was not justified since they adhere to the general requirements and guidelines of NUREG 0612 to limit the likelihood of a load drop accident and their procedures limit the "worst case" load drop accident height of the reactor vessel head to no higher than the 62' elevation of containment. The inspectors toured the Unit 1 containment building and noted that the reactor vessel head was stored on the 62' elevation next to a fixed handrail surrounding the upper refueling cavity. The inspectors realized that the reactor

vessel head would have to be lifted above the handrail which was approximately 6 feet above the 62' elevation floor level when following the safe load path to and from the reactor vessel flange. This observation was in contrast to the FPL response dated September 30, 1981. The inspectors then reviewed applicable load handling procedures and noted there were no limits in place that would restrict lifting the reactor vessel head above a prescribed height to limit the likelihood of a load handling accident as communicated to the NRC in FPL response dated September 30, 1981. This issue is unresolved pending additional inspections to review the licensee's investigation and corrective actions. This item is identified as unresolved item URI 05000335, 389/2007003-01, Reactor Vessel Head Lift Practices.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors witnessed portions of the following six surveillance tests and monitored personnel conducting the tests as well as equipment performance, to verify that testing was being accomplished in accordance with applicable operating procedures. The test data was reviewed to verify it met TS, UFSAR, and/or licensee procedure requirements. The inspectors also verified that the testing effectively demonstrated the systems were operationally ready, capable of performing their intended safety functions, and that identified problems were entered into the licensee's CAP for resolution. The tests included one inservice test (IST).

- 1-OSP-03.01B, 1B HPSI Full Flow Test
- 2-0700052, AFW Actuation Signal Relay Test
- 1-OSP-03.06B, 1B LPSI Pump Code Run (IST)
- OSP-37.01, Ultimate Heat Sink Barrier Valve Stroke Test
- 1-OP-0400050, Periodic Test of Engineered Safety Features
- 2-2200050B, 2B EDG Monthly Test

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors continued to periodically screen active Temporary System Alterations (TSA) for risk significant systems. The inspectors examined two TSAs listed below, including a review of the technical evaluation and its associated 10 CFR 50.59 screening. The TSA was compared to the system design basis documentation to ensure that: (1) the modification did not adversely affect operability or availability of other systems; (2) the installation was consistent with applicable modification documents; and, (3) did not affect TS or require prior NRC approval. The inspectors

also observed accessible equipment related to the TSA to verify configuration control was maintained.

- TSA 1-07-009, Temporary Cables to Monitor CEDM Cooling Fan HVE-21A

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

On June 21, 2007, the inspectors observed a quarterly EP drill of the licensee's Emergency Response Organization (ERO) for personnel in the Technical Support Center (TSC). During this drill the inspectors assessed licensee performance to determine if proper emergency classification, notification, and protective action recommendations were made in accordance with EP procedures. The inspectors evaluated the adequacy of the post drill critique conducted in the TSC.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Controls to Radiologically Significant Areas

a. Inspection Scope

Access Controls Licensee program activities for monitoring workers and controlling access to radiologically significant areas and tasks associated with the Unit 1 (U1) In-core Instrument (ICI) thimble replacement activities were reviewed and evaluated. The evaluations included, as applicable, Radiation Work Permit (RWP) details; use and placement of dosimetry; electronic dosimeter (ED) set-points; and monitoring and assessment of worker dose. The effectiveness of established controls were assessed against occupational doses received, identified personnel contamination events, and, as applicable, radiation survey results. In addition, licensee program changes to monitoring and assessing worker doses using deep dose equivalent and effective dose equivalent methods were reviewed and evaluated in detail.

Occupational workers' adherence to selected RWPs and Health Physics Technician (HPT) proficiency in providing job coverage were evaluated through direct observations

of work in progress, review of selected exposure records and investigations, and interviews with licensee staff. Select occupational exposure data from direct radiation exposure, discrete radioactive particle (DRP) or dispersed skin contamination events, and potential worker intakes associated with U1 ICI thimble replacement diving operations were reviewed and assessed independently. Proficiency of HPT job performance was evaluated through direct observation of staff during job coverage and surveillance activities.

Radiation protection program activities were evaluated against 10 CFR 20, Subparts B, C, F, G, H, J, and L; Updated Final Safety Analysis Report (UFSAR) details in Section 12, Radiation Protection; Technical Specification (TS) Sections 6.8.1, Procedures and Programs, 6.11, Radiation Protection Program, and 6.12, High Radiation Area; Safety Evaluation Related to the Approval to Use Weighting Factors for External Radiation Exposures for Florida Power & Light Company, dated February 28, 2007; Health Physics Society (HPS) American National Standards Institute (ANSI), N13.41-1997, Criteria for Performing Multiple Dosimetry; and approved licensee procedures. Licensee guidance documents, records, and data reviewed within this inspection area are listed in the Attachment.

No specified line-item samples detailed in Inspection Procedure (IP) 71121.01 were completed in full at this time.

b. Findings

No findings of significance were identified.

2OS2 As Low As Reasonably Achievable (ALARA) Planning and Controls

a. Inspection Scope

ALARA The inspectors reviewed ALARA program guidance and its implementation for the U1 RFO 21 ICI thimble replacement task and support work. The inspectors evaluated the accuracy of ALARA work planning and dose budgeting, observed implementation of ALARA initiatives and radiation controls for selected jobs in-progress, and assessed the effectiveness of source-term reduction efforts.

ALARA planning documents and procedural guidance were reviewed and projected dose estimates were compared to actual dose expenditures for the thimble replacement activities. Differences between budgeted dose and actual exposure received were discussed with cognizant licensee project staff. Changes to dose budgets relative to changes in radiation source term and/or job scope also were discussed. The inspectors attended pre-job briefings and evaluated the communication of ALARA goals, RWP requirements, and industry lessons-learned to job crew personnel.

The inspectors made direct field and closed-circuit-video observations of ICI thimble replacement and support task activities. The inspectors evaluated individual and collective dose expenditure versus percentage of the ICI thimble replacement task

complete; surveys of the work areas, appropriateness of RWP requirements; and adequacy of implemented engineering controls. In addition, the inspectors interviewed radworkers and job sponsors regarding understanding of dose reduction initiatives and their current and expected accumulated doses at completion of the job tasks.

ALARA program activities and their implementation were reviewed against 10 CFR Part 20, and approved licensee procedures. In addition, licensee performance was evaluated against guidance contained in Regulatory Guide (RG) 8.8, Information Relevant to Ensuring that Occupational Radiation Exposures at Nuclear Power Stations will be As Low As Reasonably Achievable and applicable procedures. Procedures and records reviewed within this inspection area are listed in the Attachment.

No specific line-item samples detailed in IP 71121.02 were completed at this time.

b. Findings

No findings of significance were identified.

4OA1 Performance Indicator (PI) Verification

a. Inspection Scope

The inspectors assessed the accuracy of the following PIs reported to the NRC. The inspectors reviewed the PI data of both Units 1 and 2 for the previous four quarters (i.e., Second Quarter 2006 through First Quarter 2007). Monthly Operating Reports, LERs, RCO Chronological Logs, and CRs were reviewed to verify the reported PI data was complete and accurate.

- Unit 1 Reactor Coolant System Activity
- Unit 2 Reactor Coolant System Activity

The inspections were conducted in accordance with Inspection Procedure (IP) 71151, Performance Indicator Verification. The applicable planning standard, Nuclear Energy Institute (NEI) 99-02, Revision 4, “Regulatory Assessment Performance Indicator Guidelines,” was used as reference criteria.

b. Findings

No findings of significance were identified.

4OA2 Problem Identification and Resolution of Problems

.1 Review of Items Entered into the Corrective Action Program

As required by IP 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for followup, the inspectors performed screening of items entered into the licensee’s CAP. This was

accomplished by reviewing the CR summaries from daily printed reports and periodically attending CR oversight group meetings. Documents reviewed are listed in the Attachment.

.2 Semi-Annual Review to Identify Trends

a. Inspection Scope

As required by IP 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors focused their review on condition reports associated with low oil levels in safety-related pumps and motors. The inspectors review nominally considered the six-month period of January through June 2007, although some examples expanded beyond those dates when the scope of the trend warranted. Corrective actions associated with a sample of the issues identified in the condition reports were reviewed for adequacy.

b. Findings

Introduction: The inspectors identified a Green NCV of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," during a trend review of low oil levels in safety-related pump motors. The inspectors determined that the licensee failed to take timely and effective corrective actions to prevent recurrence of continued NRC-identified low oil levels in various ECCS pump motors.

Description: In the first quarter of 2005, the inspectors identified low oil levels in both Unit 2 containment spray pump lower motor bearing oil reservoirs, as indicated by oil levels being below the minimum level line marks on the sight glass of both pumps. The inspectors also questioned what constituted minimum oil levels for operability determinations. The licensee wrote condition report 2005-7194 and added oil to each pump motor to get the level within the minimum and maximum level lines on the sight glasses. The licensee also performed an engineering analysis to determine the effect of the as-found low bearing oil levels. This analysis determined the pump motors would perform their design function given the as-found oil levels. Corrective actions were generated to revise the maintenance procedure for sampling oil to ensure additional oil is added after a sample is taken, and to revise the lubrication procedure to define the minimum and maximum oil levels required in the containment spray pump motors to remain in specification with applicable vendor manual requirements for motor reliability. In March, 2007, the inspectors identified an intake cooling water and auxiliary feedwater pump motor bearing oil level lower than the minimum oil level lines on the sight glasses. The licensee initiated condition report 2007-5932 in their CAP. The inspectors determined that the corrective actions associated with condition report 2005-7194 were narrowly focused and untimely because they did not encompass the different types of sight glasses used in other ECCS pump motors which resulted in continued out of specification oil level conditions to occur in other safety related pump motors.

Analysis: The inspectors determined that the licensee failed to take timely and effective corrective actions to prevent recurrence of continued NRC-identified low oil levels in ECCS pump motors. The finding is associated with the equipment performance attribute of the mitigating systems cornerstone. The finding was considered more than minor because if left uncorrected, would become a more significant safety concern because operations and maintenance personnel would not be aware of the vendor required oil levels for the various safety-related pumps and motors which could become out of specification and not noticed or remedied by the licensee. The finding was determined to be of very low safety significance in accordance with NRC Inspection Manual Chapter 0609, Appendix A, Attachment 1, SDP Phase 1 screening worksheet because it did not represent an actual malfunction or inoperability of a safety-related pump or motor. The inspectors also determined that the cause of this finding was related to the corrective action aspect of the problem identification and resolution cross-cutting area in the aspect of appropriate and timely corrective actions (MC 0305 aspect P. 1(d)).

Enforcement: Criterion XVI of 10 CFR Part 50, Appendix B, states in part, that "Measures shall be established to assure that conditions adverse to quality, such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected." Contrary to this requirement, the licensee failed to take timely and effective corrective actions to prevent recurrence of continued NRC-identified low oil levels in ECCS pump motors. Specifically, the licensee did not address or correct the programmatic weaknesses associated with properly maintaining and controlling safety-related pump motor bearing oil sight glass levels. The licensee entered the issue into their CAP as condition report 2007-5932. Because the licensee has entered the issue into their CAP and the finding is of very low safety significance (Green), this violation of 10 CFR 50, Appendix B, Criterion XVI, is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy: NCV 05000335, 389/2007003-02: Failure to Take Timely Corrective Actions for Ensuring Proper Oil Levels in Safety-Related Pump Motors.

.3 Annual Sample: Review of Improper Valve Alignment Resulting in RCS Leakage into the 1B ESF Pump Room

a. Inspection Scope

The inspectors selected CR 07-11353, "Transfer of Water From the RCS to the 1B ESF Pump Room," for a detailed review of the circumstances that led to approximately 7500 gallons of water being inadvertently transferred from the Unit 1 RCS to the floor of the 1B ESF pump room during a refuel outage. The inspectors reviewed the licensee's evaluation of several equipment clearance issues that occurred prior to the event and the potential consequences of the event on the plant equipment while the reactor plant was defueled. The inspectors evaluated the CR in accordance with the licensee's corrective action process as specified in licensee procedure NAP-204, "Condition Reporting."

b. Findings

No findings of significance were identified.

4OA3 Event Followup

(Closed) URI 05000335/2006010-01, Cable Spreading Room Automatic Halon Suppression System Out of Service

The licensee provided documentation showing that efforts to handle the replacement of an obsolete suppression system were reasonable. After further in-office review of this issue, it was determined that, while the licensee's immediate compensatory measures did not meet the expectations of guidance established in NRC Regulatory Issues Summary (RIS) 2005-07, "Compensatory Measures to Satisfy the Fire Protection Program Requirements," they were consistent with previous expectations accepted for other licensees with similar issues. Due to the length of out-of-service time and the time required for repairs, the licensee implemented additional compensatory measures after completion of the triennial fire protection inspection. These additional compensatory measures were consistent with RIS 2005-07, and have been reviewed by the inspectors. In a letter dated January 3, 2007, the licensee stated their intent to replace the Halon suppression system with a pre-action sprinkler system within the next year and has provided the NRC with a time-line for permanent resolution. This issue was determined to not be a performance deficiency. This URI is closed.

4OA5 Other Activities

.1 Institute of Nuclear Power Operations (INPO) Plant Assessment Report Review

a. Inspection Scope

The inspectors and Branch Chief reviewed the final report for the INPO plant assessment of St. Lucie station conducted in March 2007. The inspectors reviewed the report to ensure that issues identified were consistent with the NRC perspectives of licensee performance and to verify if any significant safety issues were identified that required further NRC follow-up.

b. Findings

No findings of significance were identified.

.2 (Open) Temporary Instruction (TI) 2515/166, Pressurized Water Reactor Containment Sump Blockage (NRC Generic Letter 2004-02) - Unit 1

a. Inspection Scope

The inspectors verified the Unit 1 implementation of the licensee's commitments documented in their September 1, 2005, response to Generic Letter 2004-02, Potential

Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors. The commitments included permanent modifications and program and procedure changes. Permanent modifications included installation of the sump screen assembly and high pressure coolant injection seal modification. Program and procedure changes were related to plant labeling, the modification process, coatings control and the technical specification surveillance for periodic screen inspection. This review also included the sump screen assembly installation procedure, screen assembly modification 10 CFR 50.59 evaluation, and vortex analysis. The hydraulic sizing report was reviewed to identify the allowable screen head loss vs. actual screen head loss and verify the strainers will fulfill the hydraulic performance requirements. The inspectors also reviewed the foreign materials exclusion controls and the completed Quality Assurance / Quality Control controls for the screen assembly installation on Unit 1.

The inspectors conducted a visual walkdown of the Unit 1 screen assembly to verify the installed screen assembly configuration was consistent with drawings and the tested configuration and to verify the design acceptance criteria for screen gap.

b. Findings and Observations

No findings of significance were identified.

Unit 1 permanent modifications completed at the time of this inspection, which included the installation of the sump screen assembly and high pressure coolant injection seal modification were implemented in accordance with St. Lucie's GL 2004-02 response. Program and procedure changes, which will apply to both units were in process.

The TI will remain open pending completion of the following GL 2004-02 commitments:

- Completion of downstream effects analysis and any subsequent corrective actions.
- Completion of chemical effects analysis and any subsequent corrective actions.
- Completion of changes to programmatic control for debris sources. These controls are to address piping and equipment insulation, housekeeping, coating, foreign materials and in containment modifications for effects on recirculation function.
- Completion of all PC/M hold points (including the strainer equipment structural qualification)
- Completion of Unit 2 GL 2004-02 commitments
- Additional inspection to be performed during the resident containment closeout inspection.

.3 Independent Spent Fuel Storage Installation (ISFSI) Project (IP 60854)

Review of Independent Spent Fuel Storage Installation (ISFSI) Cask Storage Pad Design

a. Inspection Scope

The inspector reviewed ISFSI cask storage pad design calculations and related documents. The calculations and documents included design change notices, structural qualification, and design methodology. The inspector verified the design calculations for concrete, yield strength and spacing of rebar, and pad thickness as shown in the Drawings ENG-05223-001 and -002. The review included site design seismic acceleration, friction coefficient between the cask bottom and the surface of concrete, static and dynamic load analyses, load combinations for various loading conditions, design of rebars, pad settlements, and acceptability of the pad design. The inspector verified that the load combinations for the pad design were based on the American Concrete Institute (ACI) code.

b. Findings

No findings of significance were identified.

Review of Cask Storage Pad Section No. 1 Construction and Other Modifications For ISFSI

a. Inspection Scope

The inspector reviewed construction and modification activities of Cask Storage Pad Section No. 1, associated with the St Lucie ISFSI. The inspector examined the rebar installation and observed the concrete pour for the Cask Storage Pad Section No. 1. The inspector verified the rebar size, spacing, splice length, brick supporting chair, and the concrete coverage protection on the top, side, and bottom. The inspector evaluated concrete formwork installation including depth, straightness, and horizontal bracing. The inspector also verified the overall dimensions, orientation, levelness, and slope for drainage purpose as required by the drawings. The inspector reviewed batch tickets for the materials and mixing time before the pour and observed concrete placement, vibration, and finish. The inspector observed the slump test, air content test, temperature measurement, and cylinder samples collected for compression tests. The inspector also reviewed the licensee examiners' reports for pre-pour inspections and concrete pour records. The inspector reviewed the specification, procedure, and 50.59 screen review and evaluation for Plant Change and Modification (PC/M) 05223, Pad and Apron Modification, Revision 0. The inspector compared the observation results to the project construction specification; the design drawings; and standards, codes, and criteria of the ACI and the American Society for Testing and Materials (ASTM).

b. Findings

During the concrete pour for the Cask Storage Pad Section No. 1, minor deviations were identified by the licensee in that the required tests (slump, temperature, unit weight, and compression test samples), as required in SPEC-C-081, for the 550 cumulative cubic yards (cy) of concrete batched from the Stuart batch plant were missed. This deficiency was determined to be minor because the test results for the required samples at 450 cy and 650 cy, as well as a compensatory sample at 590 cy which bracketed the required sample, were found to be acceptable. This deviation from the requirements was documented and evaluated in Condition Report (CR) 2007-13045, "Concrete testing was not performed at the interval required by SPEC-C-081." Other minor deficiencies in the area of administrative requirements, and construction and test records were documented in CRs 2007-16932, 2007-16970, and 2007-16973.

4OA6 Meetings

Exit Meeting Summary

On July 10, 2007, the resident inspectors presented the inspection results to Mr. Chris Costanzo and other members of your staff, who acknowledged the findings. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel
D. Albritton, Assistant Operations Manger
E. Armando, Site Quality Manager
D. Calabrese, Emergency Preparedness Supervisor
D. Cecchett, Licensing Engineer
C. Costanzo, Plant General Manager
M. Danford, Performance Improvement Department Supervisor
K. Frehafer, Licensing Engineer
R. Hughes, Site Engineering Manager
B. Jacques, Security Manager
G. Johnston, Site Vice President
B. Kelly, System Engineer
R. McDaniel, Fire Protection Supervisor
R. Merle, Projects Manager
L. Neely, Work Control Manager
B. Neff, System Engineer
W. Parks, Operations Manager
T. Patterson, Licensing Manager
W. Raasch, System Engineer
B. Robinson, Health Physics Manager
G. Swider, Systems Engineering Manager
J. Tucker, Maintenance Manager
R. Walker, Emergency Preparedness
D. Checcett, Licensing
B. Robinson, Radiation Protection Manager
S. Wisla, Project Manager
B. Dunn, Engineering
M. Horrell, Engineering
J. Judans, Engineering

NRC Personnel
B. Mozafari, NRR Senior Project Manager
S. Ninh, Region II Senior Project Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

05000335, 389/2515/166	TI	Pressurized Water Reactor Containment Sump Blockage (NRC Generic Letter 2004-02) (4OA5.2)
05000335, 389/2007003-01	URI	Reactor Vessel Head Lift Practices (1R20)

Opened/Closed

05000335, 389/2007003-02	NCV	Failure to Take Timely Corrective Actions for Ensuring Proper Oil Levels in Safety-Related Pump Motors (4OA2.2)

Closed

05000335/2006010-01	URI	Cable Spreading Room Automatic Halon Suppression System Out of Service (4OA3)

LIST OF DOCUMENTS REVIEWED

Condition Reports

2005-7194	2007-13033	2007-17693	2007-18952
2007-5932	2007-13232	2007-17768	2007-19022
2007-8280	2007-13458	2007-17784	2007-19084
2007-12260	2007-14399	2007-17816	2007-19102
2007-9102	2007-15009	2007-18037	2007-19119
2007-9459	2007-15684	2007-18093	2007-19185
2007-9621	2007-16716	2007-18295	2007-19329
2007-9889	2007-16721	2007-18305	2007-19411
2007-10542	2007-16739	2007-18321	2007-19630
2007-10549	2007-16784	2007-18328	2007-19687
2007-11285	2007-16824	2007-18445	2007-19743
2007-11350	2007-16879	2007-18500	2007-13045
2007-11353	2007-16895	2007-18505	2007-16932
2007-11407	2007-16913	2007-18644	2007-16970
2007-12167	2007-16936	2007-18655	2007-16973
2007-12306	2007-16977	2007-18689	
	2007-17349	2007-18883	

Procedures

PC/M 06138, Containment ECCS Sump Upgrade- Resolution to Generic Letter 2004-02, Rev.1
1MSP-68.01, Containment Recirculation Sump Inspection Surveillance Procedure, Draft
Administrative Procedure (ADM) - 12.01, Industrial Diving Operations, Revision (Rev.) 2A
Health Physics Procedure (HPP)-30, Personnel Monitoring, Rev. 41 (Draft)
HP- 112, Multibadging, Rev. 24 (Draft)
Radiation Protection Instruction (RPI) Number (No.) SL-1-21-01, In-Core Instrumentation (ICI) Thimble Replacement Radiation Protection Controls, 04/03/07)
Radiation Work Permit (RWP) 07-1357, Unit 1 62 foot (‘) Elevation (EL) Refuel Pool (High Radiation Area [HRA] Access Allowed) Thimble Modification/Diver Support: Tool Tenders/Dive Tenders/HP/Decon/Dive Master/Westinghouse Supervision/HPSS/HP

Remote Monitoring, Rev. 0
RWP 07-1358, Unit 1 62 Foot EL, Reactor Control Building (RCB) (Locked High Radiation Area [LHRA] Access Allowed), Thimble Mode Diving Operations, Rev 2.
Intra-Departmental Training Bulletin, Procedure Changes to HP 112 Multi-Badging and HPP-30 Personnel Monitoring, 04/16/07

Records and Data Reviewed

Form HP-112.3, Multibadge/Extremity EPD Log Form Exposure (mrem) Data Diving Operations, 04/16-19/07
Form HP-112.6, Entry Logs, Diving Operations, 04/1-18/07
Industrial Diving Operations: Attachment 2, Radiological Controls for Diving Operations; Attachment 3, Post Job Critique; April 16-20/2007
HPP-3 Form HPP-3.3, Area Access Log, 04/16-20/2007
Form HP-112.1, Exposure Authorization Form, April 2007
Form HPP-3.4, Locked High Radiation Area or Very High Radiation Area Control Point Briefing Accountability, 04/15/07
HPS-64, Temporary Work Platform (TWP) in Cavity: Underwater Survey Sheet for Diver Under TSP, & Underwater Survey Sheet for Outsdie Perimeter of UGS Lift Rig, 04/15/07
HPS-64, U1 RCB 62' Elevation, UGS Instrument Plate Lift- Super UP Position, 04/10/07
HPS-64, U1 RCB 62' Elevation, ICI Thimble Project/Devers Access-Egress Area, 04/18/07
HPS-64, U1 RCB 62' Diver Suit, 04/18/07
HPS-64, U1 RCB 62' ICI Thimble Project/Divers Access Egress Area, 04/17/07
HPS-64, U1 RCB 62' Reactor Cavity UGS, Body Verification Performed Under Water, 04/17/07,
ES-ME-04-26, Manufacturing Specification for St Lucie Units 1 & 2 Replacement In-core Instrument (ICI) Thimble Assemblies, Rev. 00
Condition Report (CR) Number (No.) 2007-11522, Personnel contamination Event No. 98, Diver with contamination on left hand - breach of glove during diving operation, 04/17/07
CR No. 2007-11840, Worker dose rate alarm, 04/19/07

Other Documents

PC/M 05223, Pad and Apron Modification, Revision 0
FPL 009-CALC-009, Structural Design of St. Lucie ISFSI Storage Pads, Revision 0
Drawings ENG-05223-001 and -002
Specification CN 2.9, “Specification for Concrete Materials and Mixes, Concrete Mixing and Transportation”, Revision 4
Specification CN-2.11, “Specification for Concrete Testing, Placing, Curing and Finishing,” Revision 6
SPEC-C-081, “St. Lucie ISFSI Concrete Construction Specification,” Revision 0
Summary Report - PSL ISFSI Pad Concrete Pour
Compressive Strength of Concrete Cylinders Test Reports (34 reports @ 28 days) [A.M. Engineering and Testing, Inc.]
Work Order 36001874-01
Work Order 36000438-01
Change Request Notice (CRN) 05223-14702

ACI Certification of Personnel - Field Testing - Grade I
Atlantic Services, Certification of Qualification - Inspection, Examination or Test Activities

LIST of ACRONYMS

ALARA	As Low As Reasonably Achievable
ANSI	American National Standards Institute
CFR	Code of Federal Regulations
CR	Condition Report
DRP	Discrete Radioactive Particle
ED	electronic dosimeter
FP& L	Florida Power and Light Company
HPP	Health Physics Procedure
HPS	Health Physics Surveillance
HPT	Health Physics Technician
HRA	high radiation area
ICI	In-core Instrument
IP	Inspection Procedure
LHRA	locked-high radiation area
No.	number
OS	Occupational Radiation Safety
PSL	Plant St. Lucie
QC	Quality Control
RCB	Reactor Control Building
RG	Regulatory Guide
RPI	Radiation Protection Instruction
RWP	Radiation Work Permit
TS	Technical Specification
U1	Unit 1