



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
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January 18, 2017

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
Florida Power & Light Co.
Mail Stop: NT3/JW
15430 Endeavor Drive
Jupiter, FL 33478

SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2016004 AND 05000389/2016004

Dear Mr. Nazar:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. On January 12, 2017, the NRC inspectors discussed the results of this inspection with Mr. Tom Summers, Regional Vice President and other members of your staff. The results of this inspection are documented in the enclosed report. The NRC inspectors did not identify any findings or violations of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at <http://www.nrc.gov/reading-rm/adams.html> and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

LaDonna B. Suggs, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure:
IR 05000335/2016004 and 05000389/2016004,
w/Attachment: Supplemental Information

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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: 05000335/2016004, 05000389/2016004

Licensee: Florida Power & Light Company (FP&L)

Facility: St. Lucie Plant, Units 1 & 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: October 1, 2016 through December 31, 2016

Inspectors: T. Morrissey, Senior Resident Inspector
S. Roberts, Resident Inspector
A. Butcavage, Reactor Inspector (Section 1R01 and 1R08)
R. Carrion, Senior Reactor Inspector (Section 1R08)
S. Sanchez, Senior Emergency Preparedness Inspector, (Sections 1R01,
1R11 and 1R20)
P. Capehart, Senior Operations Engineer, (Section 1R11)

Approved by: LaDonna B. Suggs, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000335/2016004, 05000389/2016004; 10/01/2016 - 12/31/2016; St. Lucie Nuclear Plant, Units 1 & 2, Integrated Inspection Report.

The report covered the three-month period of inspection from October 1, 2016, to December 31, 2016. The inspection activities were performed by the resident inspectors and specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6. No findings or violations of greater than minor significance were identified.

REPORT DETAILS

Summary of Plant Status

On September 26, 2016, Unit 1 was shutdown for a planned refueling outage (RFO). The unit was in Mode 6 with the reactor coolant system (RCS) depressurized at the beginning of the inspection period. Unit 1 was restarted on November 8, 2016 and reached 100 percent rated thermal power (RTP) on November 12, 2016. The unit was at 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent RTP. On October 6, 2016, the unit was shutdown to Mode 4 (<325 °F) in preparation of forecast hurricane force winds onsite due to Hurricane Matthew. On October 8, 2016, the unit was cooled down to Mode 5 (<200 °F) in order to replace upper gripper coils for control element assemblies (CEAs) 54 and 56. On October 13, 2016, the unit was restarted and reached 100 percent RTP on October 15, 2016. The unit was at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity, Emergency Preparedness

1R01 Adverse Weather Protection (IP 71111.01)

.1 Impending Adverse Weather Conditions - Hurricane Matthew

a. Inspection Scope

The inspectors reviewed the licensee's overall preparations and protective actions prior to and during the onset of tropical force winds experienced onsite that were associated with Hurricane Matthew that approached the site on October 6-7, 2016. The inspectors independently reviewed and verified the status of licensee actions in accordance with procedure AP-0005753, "Severe Weather Preparations". The inspectors also toured the protected area and exterior plant grounds for loose debris and unsecured material, supplies, and equipment which could pose a hazard to important plant systems, structures, and components (SSCs) during high winds. Additional areas toured are listed below.

- Unit 1 and Unit 2 emergency diesel generator (EDG) buildings
- Unit 1 and Unit 2 intake cooling water (ICW) system areas
- Unit 1 and Unit 2 component cooling water (CCW) areas
- Unit 1 and Unit 2 turbine buildings
- Unit 1 and Unit 2 startup transformer (SUT), auxiliary transformer and main transformer areas

During the approach, onset and passing of Hurricane Matthew, the inspectors continuously monitored control room activities, including the shutdown and cooldown of Unit 2. The inspectors routinely attended hurricane preparation status and progress meetings in the outage control center (OCC). The inspectors also reviewed and discussed with management the provisions for staffing, relieving, and supplying plant operators, security guards, health physics, maintenance, and emergency response organization (ERO) personnel included in the station lock-down. On October 6 and 7, 2016, the inspectors observed licensee ERO personnel in the technical support center (TSC) while they monitored storm conditions, unit status, and implemented necessary corrective actions and compensatory measures. Furthermore, significant aspects of the licensee's planning and conduct of post-hurricane plant damage assessment and recovery were also observed and examined by the inspectors. The inspectors reviewed action requests (ARs) generated by the licensee to verify that adverse weather related problems were being identified and resolved. This inspection constitutes one inspection sample for an impending adverse weather condition.

b. Findings

No findings were identified.

.2 Site Readiness for Seasonal Cold Weather Conditions

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the station's cold weather preparations as described in procedure 0-NOP-99.06, "Cold Weather Preparations". The inspectors verified the cold weather seasonal preparations were completed as specified by the procedure. ARs were checked to ensure that the licensee was identifying and resolving weather-related issues and that corrective actions from the previous cold weather season had been satisfactorily resolved. The inspectors performed a walkdown of the following safety-related equipment on both units that are exposed to the outside weather conditions to identify any potential adverse conditions. This inspection constitutes one sample.

- Unit 1 and Unit 2 EDG rooms
- Unit 1 and Unit 2 main feedwater isolation valve (MFIV) areas
- Unit 1 and Unit 2 auxiliary feed water (AFW) pump areas
- Unit 1 and Unit 2 refueling water tank (RWT) areas

b. Findings

No findings were identified.

1R04 Equipment Alignment (IP 71111.04)

.1 Partial Equipment Walkdowns (IP 71111.04Q)

a. Inspection Scope

The inspectors conducted partial alignment verifications of the systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and that those issues were documented in the corrective action program (CAP). Documents reviewed are listed in the Attachment. This inspection constitutes three samples.

- 2A SUT, 2A2 and 2A3 switchgear, and 2A EDG with 2B SUT out of service (OOS) for planned maintenance
- Unit 1 shut down cooling (SDC) Trains A and B prior to starting core onload
- Unit 1 1B train high pressure safety injection (HPSI) with 1A train HPSI OOS for a planned motor inspection

b. Findings

No findings were identified.

.2 Complete System Walkdown (IP 71111.04S)

a. Inspection Scope

The inspectors conducted a detailed walkdown and review of the alignment and condition of the Unit 1 CCW system to verify its capability to meet its design basis function. The inspectors utilized the licensee procedures listed in the Attachment, as well as other licensing and design documents, to verify the system alignment was correct. During the walkdown, the inspectors verified that: (1) valves were correctly positioned and did not exhibit leakage that would impact their function; (2) electrical power was available as required; (3) major portions of the system and components were correctly labeled, cooled, and ventilated; (4) hangers and supports were correctly installed and functional; (5) essential support systems were operational; (6) ancillary equipment or debris did not interfere with system performance; (7) tagging clearances were appropriate; and (8) valves were locked as required by the licensee's locked valve program. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, system description, and outstanding maintenance work requests/work orders (WOs). In addition, the inspectors reviewed the licensee's CAP to ensure that the licensee was identifying and resolving equipment alignment problems. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R05 Fire Protection

Fire Area Walkdowns (IP 71111.05Q)

a. Inspection Scope

The inspectors performed walkdowns of plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure AP-1800022, "Fire Protection Plan." The licensee's fire impairment lists, updated on an as-needed basis, were routinely reviewed. In addition, the inspectors reviewed the CAP database to verify that fire protection problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment. This inspection constitutes six samples as noted below.

- Unit 1, reactor containmant building (RCB) 62' elevation
- Unit 2, HPSI and containment spray pump area
- Unit 2, fuel handling building
- Unit 2, cable spreading room
- Unit 1, EDG oil storage tank area
- Unit 2, EDG oil storage tanks 2A and 2B

b. Findings

No findings were identified.

1R08 Inservice Inspection (ISI) Activities (71111.08P)

From October 3, 2016, through October 18, 2016, the inspectors conducted a review of the implementation of the licensee's ISI Program for monitoring degradation of the RCS steam generator tubes, boric acid corrosion control program, risk-significant piping and components, corrective action reports, and a sample of the containment system moisture barrier seals.

The inspections described in Sections 1R08.1, 1R08.2, 1R08.3, 1R08.4 and 1R08.5 below constitutes one ISI sample as defined in Inspection Procedure 71111.08.

.1 Non-Destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

The inspectors observed and later reviewed records of the following NDEs mandated by the American Society of Mechanical Engineers (ASME) Code Section XI to evaluate

compliance with the ASME Code Section XI and Section V requirements and, if any indications and defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement.

- Liquid penetrant test (PT) examination of Unit 1 SE-07-1B; solenoid valve (Target Rock) containment spray body-to-bonnet weld, ASME Class 2
- PT examination of Unit 1 SE-07-2B; solenoid valve (Target Rock) containment spray body-to-bonnet weld, ASME Class 2

The licensee confirmed that during non-destructive surface and volumetric examinations performed since the previous refueling outage, the licensee did not identify any recordable indications that were accepted for continued service. Therefore, no NRC review was completed for this inspection procedure attribute.

The inspectors observed the following pressure boundary welds completed for risk-significant systems during the outage to evaluate if the licensee applied the preservice NDEs and acceptance criteria required by ASME Code Section XI. In addition, the inspectors reviewed the welding procedure specification, welder qualifications, welding material certification and supporting weld procedure qualification records, to evaluate if the weld procedure was qualified in accordance with the requirements of Construction Code and the ASME Code Section IX.

- Unit 1 SE-07-1B; solenoid valve (Target Rock) containment spray body-to-bonnet Weld, ASME Class 2
- Unit 1 SE-07-2B; solenoid valve (Target Rock) containment spray body-to-bonnet weld, ASME Class 2

In addition, the inspectors independently walked down the moisture barrier seal between the containment inner shell plate and floor at elevation 18' for signs of degradation and reviewed the associated evaluation generated by the licensee via AR 02161956 for compliance with paragraph IWE-3510 of Section XI of the ASME 2001 Boiler and Pressure Vessel Code.

b. Findings

No findings were identified.

.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

For the Unit 1 reactor vessel head, a bare metal visual examination and volumetric examination were not required this outage pursuant to 10 CFR 50.55a(g)(6)(ii)(D) and St. Lucie Unit-1, Relief Request No. 8, "Alternative from Performing Volumetric /Surface Examinations of Reactor Vessel Closure Head Components" and the associated NRC safety evaluation. Relief Request No. 8 noted that the requirements of ASME Code Case N-729-1 for visual inspection of the upper surface of the reactor closure head,

would continue at the required frequency. Therefore, the inspectors reviewed the final report records of the last visual examination conducted during the 2015 refuel outage on the Unit 1 reactor vessel head penetrations, to evaluate if the activities were conducted in accordance with the requirements of the ASME Code Case and 10 CFR 50.55a(g)(6)(ii)(D). Specifically, the inspectors reviewed the following documentation and/or observed the following activities:

- Evaluated if the required visual examination scope was achieved and limitations (if applicable) were recorded in accordance with the licensee procedures.
- Evaluated if the licensee's criteria for visual examination quality and instructions for resolving interference and masking issues were adequate.
- Evaluated if the licensee implemented corrective actions and were entered into their corrective action system, if required.
- Reviewed the results of the follow-up visual examination of in-core instrumentation nozzle 70 and head vent area performed during the current 2016 outage.
- Evaluated if the next scheduled visual examination of the reactor vessel closure head surface met the frequency requirements of ASME Code Case N-729-1.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control (BACC) Inspection Activities

a. Inspection Scope

The inspectors performed an independent walkdown of portions of the RCS which recently received a licensee boric acid walkdown and evaluated if the licensee's BACC visual examinations emphasized locations where boric acid leaks could cause degradation of safety-significant components.

The inspectors also reviewed the following licensee evaluations of RCS components with boric acid deposits to evaluate if degraded components were documented in the corrective action program. The inspectors also evaluated the corrective actions for any degraded RCS components against the component ASME Code Section XI requirements and/or NRC-approved alternatives.

- AR 2037694, Unit 1, in-core instrumentation nozzle No. 70
- AR 2163854, Unit 1, reactor under vessel examination due to cavity seal leakage

The inspectors reviewed the following corrective actions related to evidence of boric acid leakage to evaluate if the corrective actions completed were consistent with the requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI.

- AR 02159394, boric acid residue observed at two SI-467 pipe locations

- AR 02159434-01, brownish colored boric acid residue observed at the Unit 1 V2516 valve gland packing
- AR 02159582-01, brown colored boric acid residue observed at the Unit 1 V3481 packing gland and yoke

b. Findings

No findings were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

The inspectors reviewed the Unit 1 eddy current (EC) examination activities in SGs A and B to evaluate the inspection activities against the licensee's Technical Specifications; NRC commitments; ASME Section XI; and Nuclear Energy Institute (NEI) 97-06, Steam Generator Program Guidelines. The inspectors reviewed the scope of the EC examinations to verify it included the applicable potential areas of tube degradation. The inspectors also verified that appropriate inspection scope expansion criteria were planned based on inspection results. In addition, the inspectors reviewed EC examination status reports to ensure that all tubes with relevant indications were appropriately screened for in-situ pressure testing. Based on the EC examination results, no new degradation mechanisms were identified, no EC scope expansion was required, and none of the SG tubes examined met the criteria for in-situ pressure testing.

The inspectors reviewed the last condition monitoring and operational assessment report to assess the licensee's prediction capability for maximum tube degradation. The inspectors' review also included the licensee's repair criteria and repair process to ensure they were consistent with plant Technical Specifications and industry guidelines. This included direct observation of tube plugging activities in SG B (location 108/91). The inspectors also reviewed the primary-to-secondary leakage (e.g., SG tube leakage) history for the last operating cycle. The inspectors noted that primary-to-secondary leakage was below the detection threshold during the previous operating cycle; none had been detected.

In addition, the inspectors reviewed documentation to ensure that data analysts, EC probes, and equipment configurations were qualified to detect the existing and potential SG tube degradation mechanisms. The inspectors' review included a sample of site-specific Examination Technique Specification Sheets to ensure that their qualification was consistent with Appendix H or I of the Electric Power Research Institute (EPRI) Pressurized Water Reactor Steam Generator Examination Guidelines, Revision 7. The inspectors also directly observed a sample of EC data acquisition in SGs A and B (Cold Leg and Hot Leg sides).

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI/SG related problems entered into the licensee's corrective action program and conducted interviews with licensee staff to determine if:

- the licensee had established an appropriate threshold for identifying ISI/SG related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance

.1 Control Room Observations (IP 71111.11Q)

a. Inspection Scope

The inspectors observed and assessed licensed operator performance in the plant and main control room, particularly during periods of heightened activity or risk and where the activities could affect plant safety. Documents reviewed are listed in the Attachment. Specifically, the inspectors observed activities in the control room during the following evolution:

- October 6, 2016, Unit 2 shutdown due to Hurricane Matthew

The inspectors focused on the following conduct of operations attributes as appropriate:

- Operator compliance and use of procedures
- Control board manipulations
- Communication between crew members
- Use and interpretation of plant instruments, indications and alarms
- Use of human error prevention techniques
- Documentation of activities, including initials and sign-offs in procedures
- Supervision of activities, including risk and reactivity management

This inspection completes one sample of control room observations under this inspection procedure.

b. Findings

No findings were identified.

.2 Licensed Operator Regualification (IP 71111.11A)

a. Inspection Scope

Annual Review of Licensee Regualification Examination Results: On December 20, 2016, the licensee completed the annual regualification operating examinations, and also completed the comprehensive biennial regualification written examinations, which are required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual written and operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Regualification Program." These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix I, "Operator Regualification Human Performance Significance Determination Process."

This inspection completes one sample of an annual review of regualification results under this inspection procedure.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness (IP 71111.12Q)

a. Inspection Scope

The inspectors reviewed the performance data and the associated AR for an equipment issue to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and licensee administrative procedure ADM-17-08, "Implementation of 10 CFR 50.65, The Maintenance Rule (MR)." The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of MR a(1) and a(2) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors reviewed the associated system health report. The inspectors verified that equipment problems were being identified and entered into the licensee's CAP. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

- AR 2164166, 1A train CCW pump bearing degradation

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control (IP 71111.13)

a. Inspection Scope

The inspectors completed in-office reviews, plant walkdowns, and control room inspections of the licensee's on-line and shutdown risk assessment of emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council, 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants;" and licensee administrative procedure ADM-17.16, "Implementation of the Configuration Risk Management Program." The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors interviewed responsible senior reactor operators on-shift, verified actual system configurations, and specifically evaluated results from the online risk monitor (OLRM) or shutdown safety assessment (SSA) for the combinations of OOS risk significant SSCs listed below. Documents reviewed are listed in the Attachment. This inspection constitutes four samples.

- Unit 2, Yellow OLRM assessment with 2B SUT OOS for planned maintenance
- Unit 1, Yellow SSA with the unit in Mode 6 and the RCS depressurized and drained to a lowered inventory condition to support reactor head installation
- Unit 1, Yellow OLRM assessment with 1A HPSI pump OOS for a planned motor inspection
- Unit 2, Yellow OLRM assessment due to 2B ICW header being technical specification inoperable due to a through-wall piping leak

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments (IP 71111.15)

a. Inspection Scope

The inspectors reviewed ARs' interim dispositions and operability determinations or functionality assessments to ensure that they were properly supported and the affected SSCs remained available to perform their safety function with no increase in risk. The inspectors reviewed the applicable Updated Final Safety Analysis Report (UFSAR), and associated supporting documents and procedures, and interviewed plant personnel to

assess the adequacy of the interim disposition. This inspection constitutes four samples.

- AR 2151208, Unit 1 feed water header check valve V09820 seat leakage
- AR 2112169, Unit 1 V3527 RCS pressure boundary seat leakage
- AR 2167688, 1C AFW pump outboard seal leakage (failed post-maintenance test (PMT) for seal replacement)
- AR 2168461, Unit 1 incore detector failure

b. Findings

No findings were identified.

1R18 Plant Modifications (IP 71111.18)

a. Inspection Scope

The inspectors reviewed the engineering change (EC) documentation for the permanent modifications listed below. The inspectors reviewed the modification to verify it was implemented as described in procedure EN-AA-205-1100, "Design Change Packages." The inspectors reviewed the 10 CFR 50.59 screening and evaluation review to verify that the modification had not affected system operability and availability. The inspectors reviewed associated plant drawings and UFSAR documents impacted by these modifications and discussed the changes with licensee personnel to verify the installations were consistent with the modification documents. The inspectors observed portions of each modification installation. Additionally, the inspectors verified that any issues associated with the modifications were identified and entered into the licensee's CAP. This inspection constitutes two samples.

- EC 286953, Unit 2 PIA-3320 reverse logic for boundary valve V3527
- EC 282961, Unit 1 cable spreading room electrical raceway cover installation

b. Findings

No findings were identified.

1R19 Post Maintenance Testing (IP 71111.19)

a. Inspection Scope

For maintenance WOs, the inspectors reviewed the test procedures and either witnessed the testing or reviewed test records to determine whether the scope of testing adequately verified that the work performed was completed correctly and demonstrated that the affected equipment was functional and operable. The inspectors verified that the requirements of licensee procedure ADM-78.01, "Post Maintenance Testing," were incorporated into test requirements. Documents reviewed are listed in the Attachment. This inspection constitutes five samples.

- WO 40493189, Unit 1 ICW valve HCV-21-7, actuator bolts missing/damaged
- WO 40372021, Unit 2, troubleshoot and repair control element assembly CEA-83
- WO 40495788, 1A CCW motor replacement
- WO 38022798, 1B HPSI motor replacement
- WO 40469413, replace motor-operated rheostat for 1A EDG

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities (IP 71111.20)

.1 Unit 1 Refueling Outage SL1-27

a. Inspection Scope

The Unit 1 planned RFO started on September 26, 2016. Inspection activities previously completed were documented in NRC Integrated Inspection Report 05000335/2016003, 05000389/2016003 (ML16315A206).

Outage Planning, Control and Risk Assessment

The inspectors reviewed the risk reduction methodology employed by the licensee during various daily RFO SL1-27 meetings, including the OCC morning meetings, operations team meetings, and schedule performance update meetings. The inspectors examined the licensee implementation of SSAs during RFO SL1-27 in accordance with licensee procedure OM-AA-101-1000, "Shutdown Risk Management," to verify whether a defense-in-depth concept was in place to ensure safe operations and avoid unnecessary risk. In addition, the inspectors regularly monitored OCC activities and interviewed responsible OCC management to ensure system, structure, and component configurations and work scope were consistent with Technical Specification (TS) requirements, site procedures, and outage risk controls. Documents reviewed are listed in the Attachment.

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

- Verified shutdown cooling system and spent fuel pool (SFP) cooling system operation
- Evaluated implementation of reactivity controls
- Reviewed control of containment penetrations
- Examined foreign material exclusion controls put in place inside containment (e.g., around the refueling cavity, near sensitive equipment and RCS breaches)

Fatigue Management Activities

The inspectors verified the licensee had scheduled covered personnel such that the minimum days off for individuals working on outage activities were in compliance with 10 CFR 26.205(d)(4) and (5). There were no waiver requests, self-declarations or fatigue assessments completed during the outage.

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, the SFP, and the refueling cavity inside containment. The inspectors also examined licensee activities to control and track the position of each fuel assembly. The inspectors evaluated the licensee's ability to close the containment equipment, personnel, and emergency hatches in a timely manner per procedure 1-GMM-68.02, "Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches."

Lowered Inventory Condition

The inspectors reviewed the planned activities associated with a period of lowered RCS inventory established in order to reinstall the reactor vessel head. The inspectors verified the licensee had controls in place to govern lower inventory conditions. The inspectors verified that the necessary instrumentation and means of adding inventory to the RCS were available.

Heat-up, Mode Transition, and Reactor Startup Activities

The inspectors examined selected TS, license conditions, and 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 reactor plant startup and conducted a containment walkdown prior to restarting the unit. 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 heat up, reactor startup, and power ascension in accordance with the following plant procedures:

- 1-PTP-81, "Reload Startup Physics Testing"
- 1-PTP-91, "Unit 1 Initial Criticality Following Refueling"

- 1-GOP-302, "Reactor Startup Mode 3 to Mode 2"
- 1-GOP-201, "Reactor Plant Startup Mode 2 to Mode 1"

Corrective Action Program

The inspectors reviewed ARs generated during SL1-27 to evaluate the licensee's threshold for initiating ARs.

Inspections completed during this inspection period along with the inspections completed as documented in NRC Integrated Inspection Report 05000335/2016003, 05000389/2016003 (ML16315A206) constitutes one refueling activity inspection sample.

b. Findings

No findings were identified.

.2 Unit 2 Forced Outage Due to Hurricane Matthew and Subsequent Replacement of Upper Gripper Coils for CEAs 54 and 56

a. Inspection Scope

On October 6, 2016, the licensee shutdown Unit 2 prior to forecasted onsite winds reaching hurricane force due to the approach of Hurricane Matthew. The unit was cooled down to approximately 210 °F (Mode 4 < 325 °F) prior to the storm arrival. Subsequent to the passing of the storm, the unit was cooled down to Mode 5 (< 200 °F) in order to replace the upper gripper coils for CEA-54 and CEA-56. The unit was restarted on October 13, 2016 and reached 100 percent RTP on October 14, 2016. Documents reviewed are listed in the Attachment.

Outage Planning, Control and Risk Assessment

The inspectors reviewed the licensee's forced outage schedule to verify that the licensee had appropriately considered risk, industry experience and previous site specific problems.

Monitoring of Shutdown Activities

The inspectors observed portions of the cooldown process to verify that TS cooldown restrictions were followed. The inspectors conducted a containment walkdown after the shutdown to assess the condition of the systems within containment that are inaccessible with the unit at power. The inspectors performed walkdowns of important systems and components used for decay heat removal from the reactor core during the shutdown period including the ICW and the CCW systems.

Outage Activities

The inspectors examined outage activities to verify that they were conducted in accordance with TSs, licensee procedures, and the licensee's outage risk control plan.

Some of the more significant inspection activities accomplished by the inspectors were as follows:

- Verified operability of RCS pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Verified shutdown cooling system operation
- Evaluated implementation of reactivity controls
- Examined containment foreign material exclusion controls put in place for the limited work inside containment

Heat-up, Mode Transition, and Reactor Startup Activities

The inspectors examined selected TSs, license conditions, license commitments and verified administrative prerequisites were being met prior to mode changes. The inspectors also verified containment integrity was properly established. The inspectors performed a containment closeout inspection prior to reactor plant startup. The inspectors witnessed portions of the RCS heat up, reactor startup, and power ascension. On October 13, 2016, the inspectors verified that startup activities were performed in accordance with licensee general operating procedure 2-GOP-201, "Reactor Plant Startup - Mode 2 to Mode 1."

This inspection constitutes one outage activity inspection sample.

b. Findings

No findings were identified.

1R22 Surveillance Testing (IP 71111.22)

a. Inspection Scope

The inspectors either reviewed or witnessed surveillance tests to verify that the tests met TS, the UFSAR, the licensee's procedural requirements, and demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to standby alignment required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP. Documents reviewed are listed in the Attachment. This inspection constitutes six samples as noted below.

In-Service Tests:

- 1-OSP-03.16A, "1A Low Pressure Safety Injection Pump Comprehensive Test"
- 1-OSP-07.02A, "1A Containment Spray Pump Safeguards Full Flow Test"

Surveillance Tests:

- 1-OSP-69.13B, "ESF - 18 Month Surveillance for SIAS/CIS/CSAS - Train B"
- 1-PTP-81, "Reload Startup Physics Testing"

RCS Leakage Detection Surveillance:

- 1-OSP-01.03, "Reactor Coolant System Inventory Balance"

Containment Isolation Valve Surveillance:

- 1-OSP-68.02, "Local Leak Rate" (Penetration 44 RCP Controlled Bleedoff)

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (IP 71151).1 Mitigating Systems Cornerstonea. Inspection Scope

The inspectors checked licensee submittals for the Unit 1 and Unit 2 mitigating system performance indicators (PIs) listed below for the period October 1, 2015 through September 30, 2016, to verify the accuracy of the PI data reported during that period. Performance Indicator definitions and guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedures ADM-25.02, "NRC Performance Indicators," were used to check the reporting for each data element. The inspectors checked operator logs, plant status reports, condition reports, system health reports, and PI data sheets to verify that the licensee had identified the required data, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution. PIs reviewed are listed below:

- Unit 1 and Unit 2 Emergency AC power system
- Unit 1 and Unit 2 Residual heat removal system
- Unit 1 and Unit 2 Heat removal system
- Unit 1 and Unit 2 High pressure injection system
- Unit 1 and Unit 2 Cooling water system

This inspection constitutes five samples for each unit for a total of 10 samples.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (IP 71152)

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Problem Identification and Resolution," and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered daily into the licensee's CAP. This review was accomplished by reviewing daily printed summaries of action requests and by reviewing the licensee's electronic AR database. Additionally, RCS unidentified leakage was checked on a daily basis to verify the licensee was properly trending leakage data and taking appropriate corrective actions as necessary.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review:

a. Inspection Scope

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' review was focused on repetitive equipment issues, and also considered the results of daily inspector CAP items screening discussed in section 4OA2.1, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six-month period of June 2016 through December 2016, although some examples extended beyond those dates when the scope of the issue warranted. The inspectors evaluated the licensee's administration of the ARs in accordance with the CAP, as specified in licensee procedure PI-AA-104-1000, "Corrective Action." Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Observations

No findings were identified. The inspectors identified a negative trend associated with the configuration control of electrical jumpers and lifted leads. Over the last year, the licensee documented several issues associated with jumper and lifted lead configuration control. The inspectors determined that all the deficiencies associated with the configuration control of the electrical jumpers and leads that have been fully evaluated were determined to be minor since they did not adversely affect the associated cornerstone objective and were placed in the CAP. ARs associated with these issues are listed in the Attachment. This trend was also identified by the licensee and was being evaluated under the licensee's CAP as AR 2169352.

4OA3 Follow-up of Events and Notices of Enforcement Discretion

(Closed) Licensee Event Report (LER) 05000335, 389/2016-001-00, Inadequate Legacy Evaluation for Containment High Range Radiation Monitor Nonconformance with Design Accuracy Requirements Resulted in Latent Inoperability and Operation Prohibited by Technical Specifications

On June 2, 2016, with Unit 1 and Unit 2 at 100 percent RTP, the licensee declared the containment high range radiation monitors (CHRRMs) inoperable for both units. The licensee determined that the accuracy of the CHRRMs could not be assured due to thermal induced generated currents and water intrusion/blistering of the detector cabling during some postulated design basis accidents. The inspectors reviewed the apparent cause evaluation report (AR 2135780) to verify the accuracy of the LER and the appropriateness of the corrective actions. An NRC-identified NCV associated with the inoperable CHRRMs was previously documented in NRC Design Bases Inspection (Programs) Report 05000335/2016010, 05000389/2016010 (ADAMS Accession Number ML16161A205). The LER was reviewed. No additional findings or violations of NRC requirements were identified. This LER is closed.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented their inspection results to Mr. Tom Summers, Regional Vice President and other members of licensee management on January 12, 2017.

The ISI specialist inspectors presented their inspection results via a telephone call to Mr. Chris Costanzo, Site Vice-President, and other members of the licensee staff on December 19, 2016.

The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

G. Alexander, Fleet Programs Supervisor
R. Baird, Training Site Manager
M. Blew, ISI Program
J. Brady, Nuclear Assessment Project Manager
C. Costanzo, Site Vice President
D. Cecchetti, Licensing Engineer
J. Francis, Radiation Protection Manager
K. Frehafer, Licensing Engineer
R. Gil, Steam Generator Program Manager
M. Haskin, Projects Site Manager
M. Jones, Engineering Director
L. Kestenbaum, Repair and Replacement Program
W. Parks, Operations Director
D. Pitts, Maintenance Director
R. Sciscente, Licensing Engineer
M. Snyder, Licensing Manager
C. Spenser, Chemistry Manager
K. Stone, Performance Improvement Manager
K. Thompson, Steam Generator Engineer
C. Workman, Security Manager
R. Wright, Plant General Manager
T. Summers, Regional Vice President

NRC personnel:

LaDonna B. Suggs, Chief, Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSEDClosed

05000335,389/2016-001-00 LER

Inadequate Legacy Evaluation for Containment
High Range Radiation Monitor Nonconformance
with Design Accuracy Requirements Resulted in
Latent Inoperability and Operation Prohibited by
Technical Specifications (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

2-NOP-59.01A, 2A Emergency Diesel Generator Standby Lineup
 2-NOP-59.02A, 2A Emergency Diesel Generator Operation
 1-NOP-14.01, Component Cooling Water System Initial Alignment
 1-NOP-14.02, Component Cooling Water System Operation
 1-NOP-03.05, Shutdown Cooling
 2-NOP-03.02, HPSI/LPSI Normal Operations
 2-NOP-03.11, High Pressure Safety Injection System Initial Alignment
 Unit 1, 3rd Quarter 2015 System Health Report Component Cooling Water system

Section 1R05: Fire Protection

ADM-0005728, Fire Protection Training, Qualification and Requalification
 ADM-1800022, Fire Protection Plan
 AP-1-1800023, Unit 1 Fire Fighting Strategies
 AP-2-1800023, Unit 2 Fire Fighting Strategies

Section 1R08: Inservice Inspection (ISI) Activities

Procedures

ADM-29.03, St. Lucie Plant, Boric Acid Corrosion Control Program, Rev. 16
 ENG-CSI 2.3, Steam Generator Integrity Program Administration, Revision 34
 ER-AP-01, NEXtera Nuclear Policy, Boric Acid Corrosion Control, Rev. 0
 ER-AP-116, NEXtera Nuclear Fleet Program Description, Boric Acid Corrosion Control, Rev. 0
 ER-AP-121, Steam Generator Integrity, Revision 3
 NDE Manual Examination Procedure 3.5, Component, Support & Inspection, Liquid Penetrant Examination In Accordance With Construction Codes, Revision 4
 NDE Manual Examination Procedure 4.7, Component, Support & Inspection, Visual Examination of Reactor Building Containment Vessel, General Visual/Detailed Visual (VT-1)/VT-3, Revision 4
 0-GMP-05, Control of Welding Special Processes,

Corrective Action Documents

Action Request (AR) 02024069, Fleet Steam Generator Program Self-Assessment, dated 7/30/15
 AR 02159394, Boric Acid Residue Observed at Two SI-467 Pipe Locations
 AR 02159434, Brownish Colored Boric Acid Residue Observed at the Unit 1 V2516 Valve Gland Packing
 AR 02159582, Brown Colored Boric Acid Residue Observed at the Unit 1 V3481 Packing Gland and Yoke
 AR 02161956, Moisture Barrier (Containment Side)
 AR 02037694, Boric Acid Observation on ICI Nozzle 70 at Head Penetration, 4/3/15
 AR 02163854, Reactor Under Vessel Examination, Minor Cavity Seal Leakage, 10/19/16
 AR 02079327, Quick Hit/ Department Assessment Report for the Boric Acid Corrosion Control Program Implementation at St. Lucie, 6/29/16
 Assessment #02043587, Unit 1 End of Cycle 25 Self-Assessment, dates 4/10/15-4/18/15

Assessment #02088956, Secondary Chemistry Program Self-Assessment, dated 11/16/15
 Assessment #02071252-02, NRC ISI Inspection 71111.08, dated August 30, 2016

NDE Personnel Certifications

N. Sauter, J. Venegas, S. Hutt, S. Duvall

Other Documents

03-9260868, St. Lucie (PSL) Unit 1 Eddy Current Data Analysis Guidelines, Level 3 - Information Use, Revision 000
 AES 13058422-2Q-3, Condition Monitoring and Operational Assessment for the St. Lucie Unit 1 Steam Generators Based on Eddy Current Examination End of Cycle 24, October 2013, Revision 0
 AIM 160210043-2-1, Degradation Assessment for St. Lucie Unit 1 Steam Generators for End-of-Cycle 26 (Fall 2016 Outage), Revision 0
 Eddy Current Examination Technique Specification Sheet (ETSS) 10908.4, Revision 1, for detection of Anti-Vibration Bar (AVB) wear.
 ETTS 20400.1, Revision 5, for circumferential ODSCC
 ETTS 27901.1, Revision 1 for detection of Possible Loose Part (PLP) wear
 ETTS 27901.2, Revision 2 for detection of foreign object wear by PLP
 ETTS 27902.1, Revision 2, for detection of PLP wear
 ETTS 27903.1, Revision 1, for detection of PLP wear
 ETTS 27904.1, Revision 2, for detection of PLP wear
 ETTS 27905.1, Revision 2, for detection of PLP wear
 ETTS 27906.1, Revision 1, for detection of PLP wear
 ETTS 27907.1, Revision 2, for detection of PLP wear
 ETTS 96004.1, Revision 13, for detection of wear at support structures
 ETTS 96004.2, Revision 13, for detection of wear at support structures
 ETTS 96910.1, Revision 10, for detection of wear at broached supports and structures
 Intertek letter to Florida Power & Light Company, Subject: Review of Degradation and Operational Assessments for St. Lucie Unit 1 Steam Generators for Cycles 25 and 26, dated February 4, 2015
 Intertek letter to Florida Power & Light Company, Subject: Screening Charts for Condition Monitoring of St. Lucie Unit 1 Steam Generators of the October 2016 Inspection, dated September 28, 2016
 Welding Procedure Specification (WPS)-43 Rev.12, Dated 10/10/13
 Work Order Package 40392039 04, U1 SE-07-1B, (Target Rock) Remove / Reinstall Seal Weld
 Work Order Package 40392040 05, U1 SE-07-2B; (Target Rock) Remove / Reinstall Seal Weld
 Work Request 94147800, Packing Leak at V1361
 Work Request 94148999, V1294 Minor Inactive Boric Acid at Packing
 Work Request 94149001, V1290 Inactive Boric Acid at Packing
 Work Request 94149047, V1292 Inactive Boric Acid at Packing
 Work Request 94149048, V1441 Inactive Boric Acid at Body-Bonnet Flange
 036-9260868, St. Lucie (PSL) Unit 1 Eddy Current Data Analysis Guidelines, Revision 000
 51-9200512-001, Qualified Eddy Current Examination Techniques for St. Lucie Unit 1, Revision 001
 51-9260841-000, St. Lucie Unit 1 EOC26 (SL1-27) SG ECT Inspection Plan, Revision 0
 03-1275284, Field Procedure for Remote Rolled Plugging Utilizing Plugging Control Box, Revision 021

180-9237292-000, NDE Services Final Report, St. Lucie Unit-1, L1R26 Bare Metal Visual Examination, 4/30/15
VT-16-011, NDE Summary Report, Examination of ICI #70 penetration, as a follow-up from PSL1-26 (2015) (AR 02037694), 10/17/16

Section 1R11: Licensed Operator Regualification Program and Licensed Operator Performance

2-EOP-01, Standard Post Trip Actions
2-EOP-02, Reactor Trip Recovery
2-GOP-305, Reactor Plant Cooldown- Hot Standby to Cold Shutdown
2-GOP-123, Turbine Shutdown - Full Load to Zero Load

Section 1R12: Maintenance Effectiveness

ER-AA-100-2002, Maintenance Rule Program Administration
SCEG-004, Guideline for Maintenance Rule Scoping, Risk Significant Determination, and Expert Panel Activities

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

OP-AA-104-1007, Online Aggregate Risk
WCG-016, Online Work Management
OM-AA-101-1000, Shutdown Risk Management

Section 1R15: Operability Determinations and Functionality Assessments

EN-AA-203-1001, Operability Determinations and Functionality Assessment

Section 1R19: Post Maintenance Testing

ADM-78.01, Post Maintenance Testing

Section 1R20: Refueling and Other Outage Activities

1-GOP-302, Reactor Plant Startup – Mode 3 to Mode 2
1-GOP-201, Reactor Plant Startup – Mode 2 to Mode 1

2-GOP-201, Reactor Plant Startup – Mode 2 to Mode 1
 1-GOP-303, Reactor Plant Heat up – Mode 3 < 1750 to Mode 3 > 1750
 1-NOP-03.05, Shutdown Cooling
 ADM-09.23, Outage Risk Assessment and Control

Section 1R22: Surveillance Testing

ADM-29.02, ASME Code Testing Of Pumps and Valves

Section 4OA2: Identification and Resolution of Problems

3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Maintenance
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Training Department
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Operations
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Radiation Protection
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Security
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Work Control
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Chemistry
 3rd Quarter 2016 Self-Evaluation and Trending Analysis Report - Station

Corrective Action Documents

AR 2169352, Evaluate a potential trend in IC jumper events
 AR 2151217, U1 Complicated unit trip, jumper inadvertently removed during EC
 AR 2086398, EC wiring error
 AR 2113818, Test jumper installed however test switch not closed
 AR 2144839, Maintenance removed wrong jumper
 AR 2168033, New RPS meter selector switch jumper installed incorrectly

LIST OF ACRONYMS

ADAMS	NRC's Agency-wide Documents Access and Management System
ADM	Administrative Procedure
AFW	Auxiliary Feedwater
ALARA	As Low as Reasonably Achievable
AOP	Abnormal Operating Procedure
AP	Administrative Procedure
AR	Action Request
ARERR	Annual Radiological Effluent Release Report
AC	Alternating Current
ACE	Apparent Cause Evaluation
ASME	American Society of Mechanical Engineers
BACC	Boric Acid Corrosion Control
CAP	Corrective Action Program
CCW	Component Cooling Water
CEA	Control Element Assembly
CFR	Code of Federal Regulations
CHRRM	Containment High Range Radiation Monitors
DAW	Dry Active Waste
DFS	Debris Filter System
DOT	Department of Transportation
DP	Differential Pressure
CWP	Circulating Water Pump
DOT	Department of Transportation
EC	Engineering Change or Eddy Current
ECCS	Emergency Core Cooling System
ED	Electronic Dosimeter
EDG	Emergency Diesel Generator
EOF	Emergency Operations Facility
EP	Emergency Preparedness
EPIP	Emergency Plan Implementing Procedure
ERO	Emergency Response Organization
FCV	Flow Control Valve
FHB	Fuel Handling Building
FPL	Florida Power and Light
FS	Fire System
Ft	Foot
GOP	General Operating Procedure
HP	Health Physics
HPSI	High Pressure Safety Injection
HRA	High Radiation Area
HVAC	Heating, Ventilation and Air Conditioning
HX	Heat Exchanger
IMC	Inspection Manual Chapter
ICW	Intake Cooling Water
IP	Inspection Procedure
ISFSI	Independent Spent Fuel Storage Installation

ISI	Inservice testing
LIP	Local Intense precipitation
LIV	Licensee-Identified Violation
LER	Licensee Event Report
LLRT	Local Leak Rate Test
LOCA	Loss of Coolant Accident
LP	Low Pressure
LPSI	Low Pressure Safety Injection
MH	Man Hole
MFIV	Main Feedwater Isolation Valve
MPFF	Maintenance Preventable Functional Failure
MR	Maintenance Rule (10 CFR 50.65)
mRem	Millirem
MSR	Moisture Separator Reheater
MV	Motor Valve
NCV	Non-Cited Violation
NDE	Non-Destructive Examination
NEI	Nuclear Energy Institute
NLO	Non-Licensed Operator
NOP	Normal Operating Pressure
NRC	Nuclear Regulatory Commission
NUMARC	Nuclear Management and Resource Council
OCC	Outage Control Center
ODCM	Offsite Dose Calculation Manual
OLRM	Online Risk Monitor
OOS	Out of Service
OSP	Operations Surveillance Procedure
QA	Quality Assurance
PARS	Publically Available Record
PD	Performance Deficiency
PI	Performance Indicator
PI&R	Problem Identification and Resolution
PMT	Post-Maintenance Test
PSL	Plant St. Lucie
PT	Penetrant Test
PTP	Preoperational Test Procedure
PWR	Pressurized Water Reactor
RAB	Reactor Auxiliary Building
RCA	Radiological Control Area
RCB	Reactor Containment Building
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
Rem	Roentgen Equivalent Man (i.e. dose of radiation)
REMP	Radiological Environmental Monitoring Program
RFO	Refueling Outage
RG	Regulatory Guide
RP	Radiation Protection
RPS	Reactor Protection System

RTP	Rated Thermal Power
RWP	Radiation Work Permit
RWT	Refueling Water Tank
SCBA	Self-Contained Breathing Apparatus
SDC	Shut Down Cooling
SDP	Significance Determination Process
SFP	Spent Fuel Pool
SG	Steam Generator
SSA	Shutdown Safety Assessment
SSC	Systems, Structures, and Components
SUT	Start-up Transformer
TAW	Tampa Armature Works
TI	Temporary Instruction
TSs	Technical Specifications
TSC	Technical Support Center
TSSR	Technical Specifications Surveillance Requirement
VPI	Valve Position Indication
UFSAR	Updated Final Safety Analysis Report
WANO	World Association of Nuclear Operators
WMT	Waste Monitor Tank
WO	Work Order
WR	Work Request