



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

May 1, 2018

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
Florida Power & Light Co.
Mail Stop: EX/JB
700 Universe Blvd.
Juno Beach, FL 33408

**SUBJECT: ST. LUCIE PLANT – NUCLEAR REGULATORY COMMISSION INTEGRATED
INSPECTION REPORT 05000335/2018001 AND 05000389/2018001**

Dear Mr. Nazar:

On March 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. On April 19, 2018, the NRC inspectors discussed the results of this inspection with Mr. DeBoer and other members of your staff. The results of this inspection are documented in the enclosed report.

NRC inspectors documented one finding of very low safety significance (Green) in this report. The finding did not involve a violation of NRC requirements.

If you disagree with the finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at the St. Lucie Plant.

M. Nazar

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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 Ryan C. Taylor Acting for/

Randall A. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure:
IR 05000335/2018001
and 05000389/2018001

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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: 05000335/2018001, 05000389/2018001

Enterprise Identifier: I-2018-001-0062

Licensee: Florida Power & Light Company (FPL)

Facility: St. Lucie Plant, Units 1 and 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: January 1, 2018 through March 31, 2018

Inspectors: T. Morrissey, Senior Resident Inspector
S. Roberts, Resident Inspector
W. Pursley, Health Physicist (Sections 71124.01, 71124.07 and 71151)
J. Panfel, Health Physicist (Sections 71124.06 and 71151)
J. Rivera, Health Physicist (Section 71124.08)
A. Butcavage, Reactor Inspector (Section 71111.08)

Approved by: R. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a baseline inspection at St. Lucie Plant Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

Improper Evaluation of LCV-9005 position setpoints Leads to AFAS			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green Finding FIN 05000389/2018001-01 Closed	None	71153
A self-revealed Green finding was identified when the licensee failed to properly evaluate a discrepancy between 'A' and 'B' feedwater bypass level control valve positions, as required by licensee procedures PI-AA-205, "Condition Evaluation and Corrective Action," and PI-AA-100-1008, "Condition Evaluation."			

Additional Tracking Items

Type	Tracking number	Title	Report Section	Status
Licensee Event Report (LER)	05000389/2017-004-00	Automatic Reactor Trip due to Turbine Control System Malfunction	71153	Closed

PLANT STATUS

Unit 1 began the inspection period at 100 percent rated thermal power (RTP). On March 11, 2018, the control room operators commenced a planned power reduction and manually tripped the reactor from 25 percent RTP on March 12, 2018 to start a planned refueling outage. Unit 1 was shutdown in Mode 6 at the conclusion of the inspection period.

Unit 2 operated at or near 100 percent RTP for the entire inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors performed plant status activities described in IMC 2515 Appendix D, "Plant Status" and conducted routine reviews using IP 71152, "Problem Identification and Resolution." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards."

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Impending Severe Weather (1 Sample)

The inspectors evaluated readiness for impending adverse cold weather conditions below 40 degrees Fahrenheit on January 4-5, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 1, 1B high pressure safety injection (HPSI) train with 1A HPSI train out of service (OOS) for planned maintenance on January 9, 2018
- (2) Unit 2, 2A and 2B auxiliary feed water (AFW) trains while the 2C AFW train was OOS for planned and emergent maintenance on January 17, 2018
- (3) Unit 2, 2A emergency diesel generator (EDG) while 2B EDG was OOS for an extended planned outage on January 23-25, 2018

71111.05AQ - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 2, cable spreading room on January 14, 2018
- (2) Unit 2, spent fuel handling building on February 7, 2018
- (3) Unit 1, 1B EDG room on February 23, 2018
- (4) Unit 1, reactor containment building (RCB) 62 foot (ft.) elevation on March 21, 2018
- (5) Unit 1, RCB 18 ft. and 23 ft. elevations on March 21, 2018

Annual Inspection (1 Sample)

The inspectors evaluated fire brigade performance during two separate drills on January 12, 2018 and February 5, 2018. In addition, the inspectors evaluated fire brigade performance on March 23, 2018, when responding to a Unit 1 fire resulting from a degraded welding cable that was extinguished prior to arrival of the fire brigade. The inspectors also evaluated the licensee's self-contained breathing apparatus (SCBA) program including storage, training, expectations for use, and maintenance.

71111.06 - Flood Protection Measures

Internal Flooding (1 Sample)

The inspectors evaluated internal flooding mitigation protections in the Unit 2 reactor auxiliary building (RAB) -0.5 ft. elevation on February 27, 2018.

71111.07A - Heat Sink Performance (1 Sample)

On March 14, 2018 the inspectors evaluated the readiness and availability of Unit 1, 1A component cooling water (CCW) heat exchanger (HX) by verifying periodic maintenance methods outlined in Electric Power Research Institute (EPRI) HX performance monitoring guideline, NP-7552, were utilized.

71111.08 - Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from March 19 – 23, 2018:

- (1) Magnetic Particle (MT)
 - a) Work Order 40497052-02, Weld Traveler No. 02029-018683, Weld Number 02029, ASME Code Class 3. Pipe to Pipe, Intake Cooling Water pressure boundary weld. (reviewed)
 - b) Work Order 40497052-02, Weld Traveler No. 02030-18646, Weld Number 02030, ASME Code Class 3, Pipe to Pipe, Intake Cooling Water pressure boundary weld. (reviewed)
 - c) Report No. PSL-1-MT-18-002, Summary No. SL1-010920, Component Id: RV Support @180 Degrees (B Hot Leg), ASME Code Class 1. (reviewed)

(2) Ultrasonic (UT)

- a) Summary No. 001500, Reactor Vessel Upper Shell to Intermediate Shell, Component Id: 8-203, Weld W02, Flaw No. 2, ASME Class 1, March 22, 2018 (observed Level III review of UT data)
- b) Flaw Evaluation Summary Sheet, Weld W02, Flaw No. 2, ASME Class 1, November 4, 2008 (Observed/Discussed Level III review comparison to previous 2008 UT data)
- c) Summary No. 002300, Reactor Vessel Inlet Nozzle at 120 Degrees, Nozzle to Shell Weld from Vessel Inside Diameter, Component Id: 4-205-A, Weld W27, Flaw No. 2, ASME Class 1, March 22, 2018 (observed Level III review of UT Data)
- d) Flaw Evaluation Summary Sheet, Weld W27, Flaw No. 2, ASME Class 1, November 4, 2008 (Observed/Discussed Level III review/comparison to previous 2008 UT data)

(3) Visual (VT-3)

- a) VT Data Sheet No. 4.15-001, Reactor Pressure Vessel Upper Head, Bare Metal Visual Examination, In-Core Instrumentation Penetration No. 3, March 27, 2018 (reviewed)
- b) Report No. PSL-1-VT-18-001, Summary No. SL1-010910, Component Id: RV Support @180 Degrees (B Hot Leg), ASME Code Class 1. (reviewed)

The Inspectors evaluated the licensee's boric acid control program performance and performed walk-down inspections of the reactor containment building.

71111.11 - Licensed Operator Regualification Program and Licensed Operator Performance

Operator Regualification - 71111.11Q (1 Sample)

On January 29, 2018, the inspectors observed and evaluated a licensed operator crew during an evaluated emergency plan evaluation on the control room simulator. The simulated scenario included an excessive steam demand, a manual reactor trip, and failure of engineered safety features activation system (ESFAS) which caused the control team to manually initiate emergency boration. A fire alarm in containment resulted in an Unusual Event emergency classification which required a simulated notification to the State of Florida and the NRC.

Operator Performance - 71111.11Q (1 Sample)

The inspectors observed and evaluated operator performance during a shut down and cool down of Unit 1 to support a planned refueling outage on March 11-12, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Unit 2, action request (AR) 2244819, 2C AFW steam admission valve K822 relay failure
- (2) Unit 2, AR 2232840, A train main feed isolation valve (MFIV) failure

Maintenance Rule (a)(3) periodic assessment (1 Sample)

The inspectors reviewed the licensee's Maintenance Rule periodic assessment as documented in AR 2238173 on January 25, 2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 2, elevated risk with 2C AFW pump OOS to replace an electrical relay and 2A CCW HX OOS for planned cleaning on January 17-18, 2018
- (2) Unit 2, elevated risk due to 2B EDG OOS for an extended planned outage on January 22-25, 2018
- (3) Unit 1, elevated risk due to 1A HPSI pump OOS for planned maintenance on January 19, 2018
- (4) Unit 2, elevated risk due to 2A HPSI pump, 2A low pressure safety injection pump (LPSI) OOS for planned maintenance on February 5, 2018
- (5) Unit 1, yellow risk shutdown safety assessment with the reactor coolant system (RCS) at lowered inventory to support reactor vessel head removal on March 14-16, 2018

71111.15 - Operability Determinations and Functionality Assessments (6 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 2, ARs 2226700 and 2242181 documenting a 2B EDG lube oil leak on January 24, 2018
- (2) Unit 2, AR 2245486, control room envelope negative differential pressure while in recirculation mode on February 8, 2018
- (3) Unit 1, AR 2249125, control room outside air intake radiation monitors (RIS-26-84, -85) did not cause a "Fail Alarm" during testing on February 21, 2018
- (4) Unit 1, AR 2252656, shield building ventilation high efficiency particulate air filter test results just below specification on March 7, 2018
- (5) Unit 1, ARs 2253859, 2253860, 1A EDG did not meet surveillance acceptance criteria on March 13, 2018
- (6) Unit 1, AR 2255986, refueling water tank linear stress cracks on March 26, 2018

71111.18 - Plant Modifications (1 Sample)

The inspectors evaluated the following temporary or permanent modifications:

Engineering change (EC) 290453, auxiliary feedwater actuation system (AFAS) relay modification February 13, 2018

71111.19 - Post Maintenance Testing (5 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 2, 2-OSP-69.24, "Engineered Safeguards Relay Test, Train A," after replacing a failed relay for HPSI valve HCV-3627 in accordance with work order (WO) 40580192 on January 3, 2018
- (2) Unit 2, WOs 40521474 and 40521492, post-maintenance test instructions after performing 2C AFW pump trip and throttle valve lubrication and spring testing in accordance with the same WOs on January 8, 2018
- (3) Unit 2, 2-OSP-99.08A, "A Train Quarterly Non Check Valve Cycle Test," after replacing the 2A CCW HX temperature control valve per WO 40571871 on January 19, 2018
- (4) Unit 2, 2-SMI-09.40, "Auxiliary Feedwater Actuation System Actuation Relay Test," after rewiring a relay per WO 40582284 on January 17, 2018
- (5) Unit 1, 1-OSP-99.08B, "B Train Quarterly Non Check Valve Cycle Test," after performing preventative maintenance on 1B LPSI suction valve V3432 per WO 40474746, on January 26, 2018

71111.20 - Refueling and Other Outage Activities (Partial Sample)

The inspectors evaluated Unit 1 refueling outage (SL1-28) activities from March 12, 2018 to March 31, 2018. The inspectors completed inspection procedure Sections 03.01.a, 03.01.b, and 03.01.c. The inspectors partially completed the remaining inspection procedure sections. These inspection procedure sections will be completed during the second quarter of 2018.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (3 Samples)

- (1) Unit 2, 2-OSP-59.01A, "2A Emergency Diesel Generator Monthly Surveillance," (fast start) on January 8, 2018
- (2) Unit 2, 2-SME-09.40, "Auxiliary Feedwater Actuation System Actuation Relay Test," on January 16, 2018
- (3) Unit 1, 1-OSP-69.13A, "ESF Staggered 36 Month Surveillance For SIAS/CIS/CSAS – Train A," on March 13, 2018

In-service (2 Samples)

- (1) Unit 2, 2-OSP-03.06B, "2B Low Pressure Safety Injection Pump Code Run," on February 20, 2018
- (2) Unit 1, 1-OSP-03.06A, "1A Low Pressure Safety Injection Pump Code Run," on March 7, 2018

Containment Isolation Valve (1 Sample)

Unit 1, 1-OSP-68.02, "Local Leak Rate Test" (penetration 56) on March 19, 2018

71114.06 - Drill Evaluation

Emergency Planning Drill (1 Sample)

On January 10, 2018, the inspectors evaluated an emergency response drill that included a major loss of control room annunciators, a steam generator tube leak, loss of condenser vacuum, a manual reactor trip, a steam generator tube rupture, and a stuck open main steam safety valve.

RADIATION SAFETY

71124.01 - Radiological Hazard Assessment and Exposure Controls

Radiological Hazard Assessment (1 Sample)

The inspectors evaluated radiological hazards assessments and controls.

Instructions to Workers (1 Sample)

The inspectors evaluated worker instructions.

Contamination and Radioactive Material Control (1 Sample)

The inspectors evaluated contamination and radioactive material controls.

Radiological Hazards Control and Work Coverage (1 Sample)

The inspectors evaluated radiological hazards control and work coverage.

High Radiation Area and Very High Radiation Area Controls (1 Sample)

The inspectors evaluated risk-significant high radiation area and very high radiation area controls.

Radiation Worker Performance and Radiation Protection Technician Proficiency (1 Sample)

The inspectors evaluated radiation worker performance and radiation protection technician proficiency.

71124.06 - Radioactive Gaseous and Liquid Effluent Treatment

Walkdowns and Observations (1 Sample)

The inspectors evaluated the licensee's radioactive gaseous and liquid effluent treatment systems during plant walkdowns.

Calibration and Testing Program (Process and Effluent Monitors) (1 Sample)

The inspectors evaluated the licensee's gaseous and liquid effluent monitor instrument calibration and testing.

Sampling and Analyses (1 Sample)

The inspectors evaluated radioactive effluent sampling and analysis activities.

Instrumentation and Equipment (1 Sample)

The inspectors evaluated radioactive effluent instrumentation and equipment.

Dose Calculations (1 Sample)

The inspectors evaluated dose calculations.

71124.07 - Radiological Environmental Monitoring Program

Site Inspection (1 Sample)

The inspectors evaluated the licensee's radiological environmental monitoring program.

Groundwater Protection Initiative Implementation (1 Sample)

The inspectors evaluated the licensee's groundwater monitoring program.

71124.08 - Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Radioactive Material Storage (1 Sample)

The inspectors evaluated the licensee's radioactive material storage.

Radioactive Waste System Walkdown (1 Sample)

The inspectors evaluated the licensee's radioactive waste processing facility during plant walkdowns.

Waste Characterization and Classification (1 Sample)

The inspectors evaluated the licensee's radioactive waste characterization and classification.

Shipment Preparations (1 Sample)

The inspectors evaluated the licensee's radioactive material shipment preparation processes.

Shipment Records (1 Sample)

The inspectors evaluated the licensee's non-excepted package shipment records.

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification (8 Samples)

The inspectors verified the following licensee performance indicators submittals for the periods listed below.

- (1) Radiological Effluent TS/ODCM Radiological Effluent Occurrences from April 1, 2017, through December 31, 2017
- (2) Occupational Exposure Control Effectiveness from April 1, 2017, through December 31, 2017
- (3) Unit 1, Unplanned Scrams per 7000 Critical Hours from January 1, 2017, through December 31, 2017
- (4) Unit 2, Unplanned Scrams per 7000 Critical Hours from January 1, 2017, through December 31, 2017
- (5) Unit 1, Unplanned Power Changes per 7000 Critical Hours from January 1, 2017, through December 31, 2017
- (6) Unit 2, Unplanned Power Changes per 7000 Critical Hours from January 1, 2017, through December 31, 2017
- (7) Unit 1, Unplanned Scrams With Complications from January 1, 2017, through December 31, 2017
- (8) Unit 2, Unplanned Scrams With Complications from January 1, 2017, through December 31, 2017

71152 - Problem Identification and Resolution

Annual Follow-up of Selected Issues (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issue. The issue was selected due to its repetitive nature.

2B CCW HX (AR's 2216036 and 2225449), which detailed actions taken to address tube leakage most likely caused by a combination of erosion and corrosion as a result of a stuck shell on the inside of a tube.

71153 - Follow-up of Events and Notices of Enforcement Discretion

Licensee Event Reports (1 Sample)

The inspectors evaluated the following Licensee Event Report (LER) which can be accessed at <https://lersearch.inl.gov/LERSearchCriteria.aspx>:

LER 05000389/2017-004-00, "Automatic Reactor Trip due to Turbine Control System Malfunction," on October 26, 2017

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation (1 Sample)

During the week of January 29, 2018, the inspectors, through direct observation and independent evaluation, observed the loading of dry shielded cask (DSC)-084 from the Unit 2 spent fuel pool. The inspectors verified the cask loading activities were performed in a safe manner and in compliance with approved procedures. Based on direct observation and review of selected records, the inspectors verified the licensee had properly identified each fuel assembly placed in DSC-084. Additionally, through direct observation, the inspectors verified the licensee had properly placed DSC-085 in the Independent Spent Fuel Storage Installation (ISFSI). The inspectors also observed activities associated with the transport and storage of casks, loading of spent fuel in casks, vacuum drying and seal welding activities, and the heavy lifts to remove the casks from the spent fuel pool and placing them in the cask handling facility.

INSPECTION RESULTS

Improper Evaluation of LCV-9005 Position Setpoints Leads to AFAS			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green Finding FIN 05000389/2018001-01 Closed	None	71153
<p>A self-revealed Green finding was identified when the licensee failed to properly evaluate a discrepancy between 'A' and 'B' feedwater bypass level control valve positions, as required by licensee procedures PI-AA-205, "Condition Evaluation and Corrective Action," and PI-AA-100-1008, "Condition Evaluation."</p>			
<p><u>Description:</u></p> <p>On November 19, 2013, during reactor startup activities, feedwater bypass valves, 'A' (LCV-9005) and 'B' (LCV-9006), were found to be operating at different throttle positions while maintaining their respective steam generator water levels. Valves LCV-9005 and 9006 were both originally installed in April 1978. LCV-9005 was replaced in 1994, with an equivalent valve, due to obsolescence. The original valve had a full open stroke length of 1.5 inches (in.), while the new equivalent valve had a full open stroke length of 2 in. to provide the same flow as the original valve. When installed, LCV-9005 was set up to limit its stroke length to 1.5 in., matching the replaced valve, and the associated drawings were never revised to show that the new valve had a full 2 in. open stroke length. In 2009, the distributed control system (DCS) was installed utilizing these drawings and was setup under the assumption that both valves, LCV-9005 and LCV-9006, were the same model valves and stroke lengths.</p> <p>The DCS system was designed to provide a signal to throttle the feedwater bypass valves following a reactor trip to 20 percent open to provide approximately 5 percent feed flow in order to recover steam generator water levels utilizing main feedwater. During Unit 2 startup activities in November 2013, the licensee noted a discrepancy in the valve positions for LCV-9006 and LCV-9005 when they were providing steam generator water level control. The licensee placed the issue in the corrective action program under Action Request (AR) 1921720 and determined that it was necessary to evaluate a revision of the LCV-9005 DCS setpoint, which was accomplished by an engineering condition evaluation under AR 1925428. The engineering condition evaluation was inadequate in that it failed to recognize the differences in the two different model valves, and therefore failed to provide adequate corrective actions to address performance issues associated with these differences.</p> <p>The final recommendation from AR 1925428 was that the current LCV-9005 setting did not impose any risk to the plant operation, as the 2A steam generator level had been within acceptable range with no control room alarm observed. Therefore, no setpoint change was required at that point.</p> <p>On October 26, 2017, following a Unit 2 trip, LCV-9005 was sent a digital DCS demand signal to be 20 percent open. Since the valve was locally set to have a maximum stroke of 1.5 in. instead of 2 in. open, the actual flow through the valve was less than 5 percent. This resulted in flow lower than needed to maintain 2A steam generator level, and caused level to lower, which eventually resulted in an actuation of the 'A' train auxiliary feedwater actuation system (AFAS).</p>			

Corrective Action(s): The licensee implemented corrective actions to: 1) properly set up LCV-9005 in order for it to have a full stroke length of 2 inches so that it could provide the required feedwater flow and, 2) update associated drawings to include correct stroke lengths.

Corrective Action Reference(s): This issue was entered into the licensee's CAP as AR 2232869

Performance Assessment:

Performance Deficiency: The failure to properly evaluate a discrepancy between the 'A' and 'B' feedwater bypass level control valve positions, as required by licensee procedures PI-AA-205, "Condition Evaluation and Corrective Action," and PI-AA-100-1008 "Condition Evaluation," was a performance deficiency.

Screening: The inspectors determined that the performance deficiency was more than minor because it was associated with the Mitigating Systems cornerstone attribute of human performance and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the licensee conducted an ineffective condition evaluation of a noticeable difference between the 'A' and 'B' feedwater bypass level control valve positions, discovered during a Unit 2 reactor startup on November 19, 2013. This failure of their CAP, to ensure this issue was adequately resolved, resulted in inadequate feed flow to the 2A steam generator, following a Unit 2 trip in 2017, which resulted in a lowered steam generator level and caused an actuation of the 'A' train AFAS.

Significance: Using Inspection Manual Chapter (IMC) 0609, Attachment 4, "Initial Characterization of Findings," Table 2, the finding was determined to affect the Mitigating Systems cornerstone due to degradation to main feedwater which affected decay heat removal. IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," Exhibit 2, "Mitigating Systems Screening Questions," was used to further evaluate this finding. The finding screened as Green because the deficiency did not affect the design or qualification of a mitigating structure, system, and component (SSC) and the SSC maintained its operability or functionality. This finding did not present an immediate safety concern and there were no compensatory measures in place while the licensee's long-term corrective actions were being implemented.

Cross-cutting Aspect: No cross cutting aspect was assigned to this finding because the inspectors determined the finding did not reflect present licensee performance.

Enforcement:

The inspectors did not identify a violation of regulatory requirements associated with this finding.

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

On January 26, 2018, the inspectors presented the radiation protection inspection results to Mr. DeBoer, Site Director, and other members of the licensee staff.

On March 23, 2018, the inspectors presented the inservice inspection and radiation protection results to Mr. DeBoer, Site Director, and other members of the licensee staff.

On April 19, 2018, the inspector presented the quarterly resident inspector inspection results to Mr. DeBoer and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.01: Adverse Weather Protection

0-NOP-99.06, Cold Weather Preparations

71111.04: Equipment Alignment

1-NOP-03.11, High Pressure Safety Injection Initial Alignment
2-NOP-09.11, Auxiliary Feedwater System Initial Alignment
2-NOP-59.01A, 2A Emergency Diesel Generator Standby Alignment

71111.05: Fire Protection

ADM-0005729, Fire Protection Training, Qualification and Requalification
ADM-19.02, Pre-Fire Plan Standard Operating Procedure

71111.06: Flood Protection Measures

2-AOP-24.01, RAB Flooding
WO 40497180, ESFAS Sump LS-06-1B Calibration
WO 40502838, ESFAS Sump LS-06-1A Calibration

71111.08 Inservice Inspection Activities

Procedures:

ADM-17.29, Reactor Vessel Internals Aging Management Program, Rev. 6
CY-SL-108-0002, High Activity in a Steam Generator, Rev. 2
ER-AP-116-1000, Nuclear Fleet Administrative Procedure, Boric Acid Corrosion Control Program, Rev. 2
NDE-4.15, Manual Examination Procedure, Component, Support & Inspection, Visual Examination (VE), ASME Section XI, Code Case N-722-1 and N-729-4, 3/12/18
54-ISI-364-008, NDE Procedure, Remote Underwater Visual Examination of Reactor Pressure Vessels, Vessel Internals, and Components in Pressurized Water Reactors in Accordance with Section XI. 2/8/18
54-ISI-801-003, Nondestructive Examination Procedure, Automated UT of PWR Vessel Shell Welds, 9/4/15

Drawings:

8770-G-068, "Florida Power and Light St Lucie Plant, General Arrangement, Reactor Building Sections, Sheet 2, Rev. 19
8770-G-365, "Florida Power and Light Hutchinson Island Plant, El. 18', Reactor Containment Building Sections El. 18' 0", Sheet 2, Rev. 57
E-233-496, Ebasco Services, General Arrangement Elevation, Reactor Vessel, Rev. 6
E-233-496, Ebasco Services, As-Built Reactor Vessel, Rev 4
CB Elev. OD (PSL-1), Outside Diameter, Plant St. Lucie, Unit-1, Core Barrel Elevation Plant Saint Lucie-1 (Sketch), Rev. 1
CB Elev. (PSL-1) Shroud Plate Numbering (Sketch), Rev. 3
RPV-CB Plan (PSL-1), Core Barrel in Reactor Vessel (Sketch), Rev. 2
UGFAP (PSL-1), Upper Internals Assembly Fuel Alignment Plate Bottom View (Sketch), Rev. 1
UGS (PSL-1), Upper Guide Structure (Sketch), Rev.1
01-001-G, Florida Power and Light, St. Lucie Unit-1, Reactor Pressure Vessel Upper and Lower Internal Assembly (Sketch), Rev. 2

Self-Assessments:

02079327, Quick Hit, Department Assessment Report, St Lucie Units 1 & 2, Boric Corrosion Control Program (BACCP), 6/28/16

Work Orders/Work Requests:

40289976-01, SL1-28, Att. 1, Thimble Inspection, 3/30/18

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