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

April 11, 2016

Mr. Christopher Costanzo
Site Vice President
St. Lucie Nuclear Plant
Florida Power and Light Company
6501 S. Ocean Drive
Jensen Beach, FL 34957

SUBJECT: ST. LUCIE PLANT - NRC DESIGN BASES INSPECTION (TEAM) REPORT 05000335/2016008 AND 05000389/2016008

Dear Mr. Costanzo:

On, March 4, 2016, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant, Units 1 and 2, and discussed the results of this inspection with Mr. Robert Coffey and other members of your staff. Additional inspection results were discussed with Mr. Mike Snyder and other members of your staff on April 11, 2016. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented five findings of very low safety significance (Green) in this report. Four of these findings involved violations of NRC requirements. Additionally, NRC inspectors documented one Severity Level IV violation with no associated finding. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie Plant.

If you disagree with a cross-cutting aspect assignment or a 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 Regional Administrator, Region II; and the NRC Resident Inspector at the St. Lucie Plant.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, “Public Inspections, Exemptions, Requests for Withholding,” of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC’s Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management 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/

Jonathan H. Bartley, Chief
Engineering Branch 1
Division of Reactor Safety

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

Enclosure:
Inspection Report 05000335/2016008 and 05000389/2016008,
w/Attachment: Supplementary Information

cc: Distribution via ListServ

accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 050000335, 05000389

License Nos.: DPR-67, NPF-16

Report Nos.: 05000335/2016008, 05000389/2016008

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

Facility: St. Lucie Plant, Units 1 and 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: February 8 – March 4, 2016

Inspectors: E. Stamm, Senior Reactor Inspector (Lead)
G. Ottenberg, Senior Reactor Inspector
S. Sanchez, Senior Emergency Preparedness Inspector
M. Riley, Reactor Inspector
M. Greenleaf, Trainee
N. Della Greca, Contractor
M. Yeminy, Contractor

Approved by: Jonathan H. Bartley, Chief
Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

IR 05000335/2016-008 and 05000389/2016-008; 02/08/2016 – 03/04/2016; St. Lucie Plant, Units 1 and 2; Design Bases Inspection (Team).

This inspection was conducted by a team of five Nuclear Regulatory Commission (NRC) inspectors from Region II and two NRC contract personnel. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, or Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green: The NRC identified a non-cited violation of Title 10 Code of Federal Regulations (CFR) Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to consider the impact of elevated ambient temperatures on motor operated valve (MOV) actuator output. The licensee entered the issue into the corrective action program and also evaluated the elevated ambient temperature effects on several affected station MOVs and determined the MOVs remained operable.

  The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee did not ensure the capability of several MOVs scoped into their MOV program because they did not consider reduced actuator output torque due to elevated temperatures. The team determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. This finding was assigned a cross-cutting aspect of Evaluation in the Problem Identification and Resolution Area because the finding was indicative of current licensee performance, and the licensee did not thoroughly evaluate the issue identified in AR 2030822, such that the design issue of accounting for elevated temperature was resolved [P.2]. (Section 1R21.2.b.01)

- Green: The NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to perform testing for safety-related 125 volts direct current (VDC) molded case circuit breakers (MCCBs) to detect deterioration. The licensee entered the issue into the corrective action program and plans to make changes to the procedure to ensure deterioration of the safety-related 125VDC MCCBs is adequately detected.

  The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability,

reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, cycling the breakers multiple times before electro-mechanical testing could mask degradation of the circuit breakers and thus decrease the reliability of the breakers to perform their safety function when called upon. The team determined the finding to be of very low safety significance (Green), because it was not a deficiency affecting the design or qualification of a structure, system, or component which did not maintain its functionality; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for greater than its Technical Specification (TS) allowed outage time or two separate safety systems out-of-service for greater than its TS allowed outage time; and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance. (Section 1R21.2.b.03)

- Green: The NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify a condition adverse to quality, which prevented the Unit 1 electrical equipment room (EER) supply fan dampers from performing their safety-related function to close. The licensee entered the issue into their corrective action program and implemented compensatory measures to prevent reverse flow of air through the degraded dampers in the event of a failure of their supply fan. This compensatory measure will remain in place until the licensee is able to replace both gravity dampers.

  This performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inability of the gravity dampers to close upon failure of one of the supply fans would result in room temperatures above the design temperature of 104ºF. The team determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance. (Section 1R21.2.b.04)

- Green: The NRC identified a non-cited violation of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to verify the adequacy of the Unit 1 electrical equipment room (EER) ventilation system design when performing a design calculation. The licensee entered the issue into the corrective action program and plans to re-balance flow rates in the EERs or revise the equipment qualification temperatures for equipment located in the EERs.

  The performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the re-analysis of the ventilation system resulted in a reduction in temperature margin, which could impact the reliability and capability of emergency electrical equipment in the EERs. The team determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the

design of a mitigating structure, system, or component (SSC), and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance. (Section 1R21.2.b.05)

- Green: The NRC identified a finding for the licensee's failure to properly provide a completely missile-protected intertie from the Unit 1 diesel oil transfer pumps to the Unit 2 diesel oil storage tanks. The licensee entered the issue into the corrective action program.

  The performance deficiency was determined to be more than minor because it adversely affected the Protection Against External Factors attribute of the Mitigating Systems cornerstone objective which of ensuring the availability, reliability, and capability of systems that respond to initiating events. Specifically, a postulated tornado missile could fail the unprotected section of piping, rendering the intertie unable to complete its intended function, thereby reducing the licensee's capability to mitigate a design basis tornado event. The team determined the finding to be of very low safety significance (Green) because it did not involve the total loss of any safety function, nor was it identified by the licensee through probabilistic risk assessment, Individual Plant Evaluation of External Events (IPEEE), or similar analysis that would have contributed to external event initiated core damage accident sequences. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance. (Section 1R21.3.b.01)

Other Findings

- SL-IV: The NRC identified a non-cited violation of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to update the Updated Final Safety Analysis Report (UFSAR) to reflect the offsite power design characteristic group and emergency alternating current power configuration group for station blackout coping duration. The licensee entered the issue into the corrective action program in order to update the information.

  The failure to update the UFSAR was dispositioned using the traditional enforcement process because it had the potential to impact the regulatory process. The team determined the violation was more than minor because not accurately classifying the offsite power design characteristic group and emergency alternating current power design characteristic group could have a material impact on licensed activities. The team determined the violation to be a Severity Level IV violation because the lack of up-to-date information has not resulted in any unacceptable change to the facility or procedures. This violation was not assigned a cross-cutting aspect because cross-cutting aspects are not assigned to traditional enforcement violations. (Section 1R21.2.b.02)

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R21 Design Bases Inspection (Team) (71111.21M)

.1 Inspection Sample Selection Process

The team selected risk-significant components and related operator actions for review using information contained in the licensee's probabilistic risk assessment. In general, this included risk significant structures, systems, and components (SSCs) that had a risk achievement worth factor greater than 1.3 or Birnbaum value greater than 1E-6. The sample included 11 SSCs, 2 SSCs associated with containment large early release frequency (LERF), and 3 operating experience (OE) items.

The team performed a margin assessment and a detailed review of the selected risk-significant components and associated operator actions to verify that the design bases had been correctly implemented and maintained. Where possible, this margin was determined by the review of the design basis and Updated Final Safety Analysis Report (UFSAR). This margin assessment also considered original design issues, margin reductions due to modifications, or margin reductions identified as a result of material condition issues. Equipment reliability issues were also considered in the selection of components for a detailed review. These reliability issues included items related to failed performance test results, significant corrective action, repeated maintenance, maintenance rule status, Inspection Manual Chapter 0326 conditions, NRC Resident Inspector input regarding problem equipment, system health reports, industry OE, and licensee problem equipment lists. Consideration was also given to the uniqueness and complexity of the design, OE, and the available defense-in-depth margins. An overall summary of the reviews performed and the specific inspection findings identified is included in the following sections of the report.

.2 Component Reviews

a. Inspection Scope

SSCs

- Unit 1 A & B refueling water tank (RWT) outlet check valves and A & B safety injection pump containment sump suction check valves (1-V07119, 1-V07120, 1-V07172, and 1-V07174)
- Unit 1 electrical equipment room (EER) supply fans (HVS-5A and HVS-5B)
- Unit 1 emergency diesel generator (EDG) fuel oil (FO) system
- Unit 1 / Unit 2 instrument air system sub-components (PCV-18-5 and PCV-18-6)
- Unit 1 480 volt switchgear (1A2)
- Unit 1 startup transformer (1B)
- Unit 1 125 volt direct current supply breaker (1-60213)
- Unit 1 EDG (1B)
- Unit 1 4160 volt switchgear (1A3)
- Unit 1 static inverters (1A and 1B)

- Unit 1 480 volt motor control center (1B7)

Components with LERF Implications

- Unit 1 high pressure safety injection (HPSI) pump discharge motor-operated valves (MOVs) (V-3656 and V3654)
- Unit 1 auxiliary feed water (AFW) flow control valves (V-09-09, V-09-10, V-09-11, and V-09-12)

For the 13 components listed above, the team reviewed the plant technical specifications (TS), UFSAR, design bases documents, and drawings to establish an overall understanding of the design bases of the components. Design calculations and procedures were reviewed to verify that the design and licensing bases had been appropriately translated into these documents and that the most limiting parameters and equipment line-ups were used. Logic and wiring diagrams were also reviewed to verify that operation of electrical components conformed to design requirements. Test procedures and recent test results were reviewed against design bases documents to verify the adequacy of test methods and that acceptance criteria for tested parameters were supported by calculations or other engineering documents, and that individual tests and analyses served to validate component operation under accident conditions. Maintenance procedures were reviewed to ensure components were appropriately included in the licensee's preventive maintenance program. System modifications, vendor documentation, system health reports, preventive and corrective maintenance history, and corrective action program documents were reviewed (as applicable) in order to verify that the performance capability of the component was not negatively impacted, and that potential degradation was monitored or prevented. Maintenance Rule information was reviewed to verify that the component was properly scoped, and that appropriate preventive maintenance was being performed to justify current Maintenance Rule status. Component walk downs and interviews were conducted to verify that the installed configurations would support their design and licensing bases functions under accident conditions, and had been maintained to be consistent with design assumptions.

Additionally, the team performed the following specific reviews:

- The team reviewed the most recent MOV diagnostic testing results for the Unit 1 HPSI pump discharge MOVs to verify current MOV parameters were bounded by their requirements and capability assumptions.
- The team verified the licensee was testing the Unit 1 A & B RWT outlet check valves and A & B safety injection pump containment sump suction check valves in accordance with their ASME OM Code of Record requirements for the check valve condition monitoring program.
- The team observed a simulator scenario involving a time critical operator action for aligning electrical power from Unit 1 to Unit 2 via the station blackout (SBO) crosstie to verify the required operator actions could be accomplished within the required time and as relied upon in design assumptions, and that the actions could be accomplished in accordance with approved licensee procedures.
- The team observed a simulator scenario involving a total loss of feedwater event that would require the operators to establish once through cooling to verify the actions could be accomplished as relied upon in design assumptions and in accordance with approved licensee procedures.

- The team performed table-top reviews, with a licensed operator, of several abnormal and emergency procedures to better understand actions to be taken to:
  1) makeup diesel fuel to the emergency diesel generator day tanks,
  2) align instrument air following a loss of offsite power (LOOP), and
  3) restart the EER fans following a LOOP.
- The team conducted in-field walk downs of the procedures listed above to verify the actions could be accomplished within the assumed timeframe, that there was sufficient guidance in the procedures to properly complete the tasks, that equipment or tools necessary to assist in accomplishing these tasks were available in the designated locations, and that the areas requiring accessibility were accessible. In addition, the team interviewed operators qualified to these tasks to ensure their knowledge and training was sufficient to successfully accomplish the tasks.

b. Findings

.01 Failure to Consider Elevated Temperature Effects on MOV Actuator Output Capability

Introduction: The NRC identified a Green non-cited violation (NCV) of Title 10 Code of Federal Regulations (10 CFR) Part 50, Appendix B, Criterion III, "Design Control," for the licensee's failure to consider the impact of elevated ambient temperatures on MOV actuator output.

Description: In response to the concerns raised in NRC Generic Letters (GL) 89-10 and 96-05, the licensee developed an MOV program intended to demonstrate the capability of Plant St. Lucie's safety-related MOVs to perform their design basis functions under predicted design basis conditions. These design basis conditions include parameters that affect both the required thrust and/or torque of the MOV actuators, as well as the available thrust and/or torque supplied by the motor-actuators. Proper accounting for the predicted effect of the design basis elevated ambient temperature on motor-actuators manufactured by Limitorque was described in the licensee's design standard, STD-M-003, "Engineering Guidelines for Sizing and Evaluation of Limitorque Motor Operators," Revision 6. This standard described, in section 6.4.1, that, "if a motor operator may be potentially subject to high temperatures (>104ºF) reduced motor starting torque should be considered in capability evaluations." The requirement to consider the effects of elevated temperature was derived from Limitorque Technical Update 93-03, "Reliance 3 Phase LImitorque Corporation Actuator Motors (Starting Torque @ Elevated Temperature," dated September 1993, which stated, in part, "torque reduction is to be applied at temperatures >40ºC (104ºF)." The team determined that the licensee had not correctly implemented the guidance in Limitorque Technical Update 93-03 and their design standard, STD-M-003, when determining the MOV actuator capability of several MOVs.

The team noted that the licensee evaluated the impact of elevated ambient temperature on MOVs in their corrective action program in Action Request (AR) 2030822, "Elevated Temperature for MOV Operation," dated March 9, 2015. In their evaluation of the design question documented in the AR, the licensee incorrectly determined that they were accounting for the effects of elevated ambient temperature by using an application factor of 0.9, and therefore did not update any design calculations that determined MOV actuator output capability. While the application factor was discussed in Limitorque Technical Update 93-03, it was not intended to account for the elevated ambient temperature effects, and therefore needed to be considered separately. The licensee

entered this issue into the corrective action program as AR 2110968. The licensee evaluated the impact of elevated ambient temperature effects on the affected MOVs, and determined that the MOVs remained operable, although some design margin was lost. Specifically, the Unit 1 and 2 shutdown cooling isolation valves margin reduced from above 10 percent (high margin) to below 10 percent (medium margin). This reduction in margin could affect the frequency at which the valves are to be tested in order to meet the requirements of the licensee's GL 96-05 MOV program.

Analysis: The failure to consider elevated ambient temperature effects on MOV actuator output capability as required by Limitorque Technical Update 93-03 and STD-M-003 was a performance deficiency and a failure to meet 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The performance deficiency was determined to be more than minor because it was associated with the Mitigating Systems cornerstone attribute of Design Control and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the licensee did not ensure the capability of several MOVs scoped into their MOV program because they did not consider reduced actuator output torque due to elevated temperatures. The team used IMC 0609, Att. 4, "Initial Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0609, App. A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating SSC, and the SSC maintained its operability or functionality. This finding was assigned a cross-cutting aspect of Evaluation in the Problem Identification and Resolution Area, because the finding was indicative of current licensee performance, and the licensee did not thoroughly evaluate the issue identified in AR 2030822, such that the design issue of accounting for elevated temperature was resolved [P.2].

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, that design control "measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled." Licensee Standard STD-M-003 required that reduced motor starting torque should be considered in capability evaluations for Limitorque motor operators potentially subject to high temperatures (>104ºF). Contrary to the above, since September 1993, the licensee did not control a deviation from their quality standard for MOV design. Specifically, the licensee did not adequately consider the impact of elevated temperatures in their design calculations for MOV actuator capability. In response to this issue, the licensee evaluated the elevated ambient temperature effects on several affected station MOVs and determined the MOVs remained operable. This violation is being treated as an NCV consistent with section 2.3.2 of the Enforcement Policy. The violation was entered into the licensee's corrective action program as AR 2110968. (NCV 05000335/2016008-01 and 05000389/2016008-01, "Failure to Consider Elevated Temperature Effects on MOV Actuator Output Capability.")

.02 Failure to Update UFSAR to Reflect Station Blackout Coping Time Basis

Introduction: The NRC identified a Severity Level (SL) IV NCV of 10 CFR 50.71, "Maintenance of Records, Making of Reports," for the licensee's failure to update the UFSAR to reflect the offsite power design characteristic group and emergency AC power configuration group for station blackout coping duration.

Description: On June 11, 1992, the NRC issued a supplemental safety evaluation (SSE) report confirming the licensee's conformance to 10 CFR 50.63, "Loss of all alternating current power," (the station blackout rule) as was outlined in a previous safety evaluation report (SER) dated September 12, 1991. In the September 12, 1991, SER, the licensee committed to an offsite power design characteristic group of "P3*" and a power design characteristic group of "C." From NUMARC 87-00, Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors, dated August 1991, the licensee was afforded the option of committing to power design characteristic group "P3*" which reduced their coping duration from eight hours to four hours, provided that the plant created hurricane preparation procedures and committed to placing the unit into a safe shutdown condition two hours before an anticipated hurricane arrives at the site. The licensee was given an emergency AC group of "C" for having two dedicated diesel generators, of which one is required for safe shutdown (Table 3-7 of NUMARC 87-00) of Unit 1. No credit was given to the electrical cross-tie in determining the emergency AC group since the cross-tie does not meet the definition of "normally shared" per NUMARC guidance.

When reviewing the licensee's current updated final safety analysis report (UFSAR Amendment 27), section 8.3.1.1.7.g, "Diesel Generator Reliability Program," the team noted the UFSAR listed the offsite power design characteristic group as "P3" and the emergency AC power configuration group as "A," which differed from the commitment referred to in the September 12, 1991, SER.

The licensee entered this issue into their corrective action program as AR 2109417, and planned to update the UFSAR to reflect the correct offsite power design characteristic group and emergency AC power design characteristic group as "P3*" and "C," respectively.

Analysis: The failure to update the UFSAR in accordance with 10 CFR 50.71(e) to correctly reflect the offsite power design characteristic group and emergency AC power design group was a performance deficiency. The finding was dispositioned using the traditional enforcement process instead of the significance determination process (SDP) in accordance with IMC 0612, Appendix B, because it has the potential to impact the regulatory process. The team used the NRC Enforcement Manual, Rev. 9, dated September 9, 2013, and determined the violation was more than minor because not accurately classifying the offsite power design characteristic group and emergency AC power design characteristic group could have a material impact on licensed activities. The team used the NRC Enforcement Policy, dated February 4, 2015, and determined the violation to be a Severity Level IV violation because the lack of up-to-date information has not resulted in any unacceptable change to the facility or procedures. This violation was not assigned a cross-cutting aspect because cross-cutting aspects are not assigned to traditional enforcement violations.

Enforcement: Title 10 CFR 50.71(e) required, in part, that licensees shall periodically update the final safety analysis report (FSAR), originally submitted as part of the application for the operating license, to assure that the information included in the report contains the latest information developed. This submittal shall include all safety analyses and evaluations in support of approved license amendments. Contrary to the above, since June 11, 1992, the licensee failed to update the UFSAR to assure that information included in the report contained the latest information developed.

Specifically, the licensee failed to include the correct offsite power design characteristic group and emergency AC power design characteristic group. The licensee entered the issue into the corrective action program in order to update the information. This violation is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. The violation was entered into the licensee's corrective action program as AR 2109417. (NCV 05000335/2016008-02, "Failure to Update UFSAR to Reflect Station Blackout Coping Time Basis.")

.03 Inadequate Testing of 125VDC MCCBs

Introduction: The NRC identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," for the licensee's failure to perform testing for safety-related 125VDC molded case circuit breakers (MCCBs) to detect deterioration.

Description: St. Lucie Nuclear Plant, Unit 1, was committed to IEEE 308-1970, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations," per the UFSAR Section 8.1.2.2. IEEE 308-1970, Section 6.3, titled "Periodic Equipment Tests," specified in part, that "tests shall be performed at scheduled intervals to: (1) Detect the deterioration of the system toward an unacceptable condition and; (2) Demonstrate that standby power equipment and other components that are not exercised during normal operation of the station are operable."

When needed, MCCBs must rapidly isolate a faulted or overloaded circuit to prevent equipment damage. Therefore, for the safe operation of the electrical distribution system equipment of a nuclear power plant, it is important to periodically verify their continued reliability. The licensee's periodic testing procedure for testing safety-related 125VDC MCCBs was 0-EMP-100.16, "Molded-Case Breaker Tests," Rev. 17. Step 6.1.6 of this procedure stated to cycle the MCCBs on and off three to five times prior to performing MCCB testing. Such testing does not provide information on the condition of the circuit breaker for trending purposes and could influence subsequent electro-mechanical testing. The team determined that cycling the breakers prior to performing the test as stated in the procedure could mask deterioration and degradation of the safety-related 125VDC MCCBs toward an unacceptable condition as required by IEEE 308-1970, thereby adversely affecting the breakers' ability to perform their safety function when called upon. The licensee entered this issue into their corrective action program as AR 2114404 and plans to make changes to the MCCB testing procedure.

Analysis: The failure to perform testing for safety-related 125VDC MCCBs to detect deterioration in accordance with IEEE 308-1970, Section 6.3, was a performance deficiency and a failure to meet 10 CFR Part 50, Appendix B, Criterion XI, "Test Control." The performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, cycling the breakers multiple times before electro-mechanical testing could mask degradation of the circuit breakers and thus decrease the reliability of the breakers to perform their safety function when called upon. The team used IMC 0609, Attachment 4, "Initial Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0612, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green), because it was not

a deficiency affecting the design or qualification of a structure, system, or component which did not maintain its functionality; did not represent a loss of system and/or function; did not represent an actual loss of function of at least a single train for greater than its TS allowed outage time or two separate safety systems out-of-service for greater than its TS allowed outage time; and did not represent an actual loss of function of one or more non-TS trains of equipment designated as high safety-significant in accordance with the licensee's maintenance rule program for greater than 24 hours. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion XI, "Test Control," required, in part, that "A test program shall be established to assure that all testing required to demonstrate that SSCs will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents." UFSAR Section 8.1.2.2, stated the Class 1E power system conforms to IEEE 308-1970. Section 6.3 of IEEE 308-1970, titled "Periodic Equipment Tests," specified, in part, that "tests shall be performed at scheduled intervals to: (1) Detect the deterioration of the system toward an unacceptable condition." Contrary to the above, since 2007, the licensee failed to perform a testing program which identified all testing required to demonstrate that safety-related 125VDC MCCBs would perform satisfactorily in service in accordance with written test procedures which incorporated the requirements and acceptance limits contained in IEEE 308-1970, the applicable design document. The licensee plans to make changes to the procedure to ensure deterioration of the safety-related 125VDC MCCBs is adequately detected. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. The violation was entered into the licensee's corrective action program as AR 2114404. (NCV 05000335/2016008-03, "Inadequate Testing of 125VDC MCCBs.")

.04 Failure to Identify Degraded Condition of Unit 1 Electrical Equipment Room Supply Fan Gravity Dampers

Introduction: The NRC identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for the licensee's failure to identify a condition adverse to quality, which prevented the Unit 1 EER supply fan dampers from performing their safety-related function to close.

Description: The Unit 1 EER supply fans HVS-5A and HVS-5B are equipped with gravity dampers whose safety function is to close when the associated fan does not operate. The two supply fans, HVS-5A and HVS-5B, discharge air to a common plenum, and the closure of the fan discharge damper prevents reverse airflow from the operating fan through the idle fan which would prevent a portion of the flow rate of the operating fan from reaching the EERs. The Unit 1 EERs consist of the A switchgear room, B switchgear room, static inverter room, cable spreading room, and two battery rooms. The St. Lucie Unit 1 UFSAR, Section 9.4.2.2.2, stated that with an outside air temperature of 93ºF, the ventilator air flowrates are sufficient to maintain all EERs less than 104ºF without the operation of either non-safety grade air conditioner and that analysis has demonstrated that temporary (and infrequent) temperature excursions of up to 120ºF will not affect the operability of safety-related equipment in the EERs. In addition, licensee calculation PSL-1FJM-91-001, "PSL-1 RAB Electrical Equipment Rooms HVAC Computer Model Data Inputs and Outputs," Revision 2, stated that the

design criteria of the EER ventilation system is to achieve a room temperature less than 104°F with an outside air temperature of 93°F.

Work Order 4014594601, performed on February 23, 2012, documented that the dampers would not close because the housing was newly painted internally and externally which hindered the damper weight effect, "but not the fan performance." The licensee's review of the work order failed to identify the error in the determination that fan performance was not affected and, therefore, a corrective action document was not issued. The team determined that the closure of the dampers is a safety-related function meant to prevent loss of airflow to the EERs due to the reverse flow of the operating fan through the idle fan, and that when the condition was identified, it should have been entered into the licensee's corrective action program.

Following the identification of this concern by the team, the licensee assessed the condition by shutting down one operating fan and observed that the gravity damper of the non-operating fan remained fully opened. The same observation was made when the second supply fan was shut down. The licensee was also unable to manually close the dampers by applying force to their counterweights. Licensee calculation PSL-1FJM-91-001, did not have any margin to the design temperature with the full flow of one operating fan. With the degraded condition of the non-closing dampers, the team was concerned that the "short-circuited" air would not only reduce the airflow rate to the EERs, but also re-enter the suction side of the operating fan with an increased temperature, contributing to an increase in temperature of the EERs.

The licensee implemented compensatory measures to monitor the duct pressure during operator rounds to detect a supply fan failure, fabricate two blind plates to be installed in place of a non-functioning gravity dampers in the event that a fan fails, and pre-stage the blind plates with a tool box inside the supply fans plenum. Additionally, the licensee conducted field tests to quantify the reduction of supply flow caused by the failed-open dampers and developed a GOTHIC computer model of the EERs to determine the temperature increase caused by the loss of a supply fan. The results of the field tests determined supply airflow rates would have been degraded from 34,620 to 29,830 cubic feet per minute. The GOTHIC computer analysis determined that, during a design basis event and the single failure of a supply fan, the degraded dampers would result in an increase in maximum EER temperature from 108.8ºF to 112.2ºF, which represents an approximately 30% reduction in operating temperature margin. The licensee determined that the EERs would not be maintained under the design temperature of 104ºF, however, would remain less than 120ºF, and therefore, the emergency electrical equipment located in the rooms would remain capable of performing their functions during the short periods of time necessary.

Analysis: The failure to identify a condition adverse to quality which would result in a reduction of flow rate and an increase in EER temperatures, upon loss of a supply fan, was a performance deficiency and a failure to meet 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action." This performance deficiency was determined to be more than minor because it was associated with the Equipment Performance attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the inability of the gravity dampers to close upon failure of one of the supply fans would result in room temperatures above the design temperature of 104ºF. The team used IMC 0609,

Attachment 4, “Initial Characterization of Findings,” issued June 19, 2012, for Mitigating Systems, and IMC 0612, Appendix A, “The Significance Determination Process (SDP) for Findings At-Power,” issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating SSC, and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” required, 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 the above, since February 2012, the licensee failed to promptly identify and correct a condition adverse to quality. Specifically, the licensee identified that the gravity dampers of the HVS-5A and HVS-5B supply fans were not capable of closing, but did not enter the condition into the corrective action program. The licensee implemented compensatory measures to pre-stage blind plates to prevent short-circuiting of air in the event of a failure of a supply fan. This compensatory measure will remain in place until the licensee is able to replace both gravity dampers. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. The violation was entered into the licensee’s corrective action program as ARs 2108868 and 2109116. (NCV 05000335/2016008-04, “Failure to Identify Degraded Condition of Unit 1 Electrical Equipment Room Supply Fan Gravity Dampers.”)

.05 Failure to Verify the Adequacy of Design of Unit 1 Electrical Equipment Room Ventilation System

Introduction: The NRC identified a Green NCV of 10 CFR Part 50, Appendix B, Criterion III, “Design Control,” for the licensee’s failure to verify the adequacy of the Unit 1 EER ventilation system design when performing a design calculation.

Description: The St. Lucie Unit 1 UFSAR, Section 9.4.2.2.2, stated that with an outside air temperature of 93ºF, the ventilator air flowrates are sufficient to maintain all EERs less than 104ºF without the operation of either non-safety grade air conditioner and that analysis has demonstrated that temporary (and infrequent) temperature excursions of up to 120ºF will not affect the operability of safety-related equipment in the EERs. In addition, licensee calculation PSL-1FJM-91-001, “PSL-1 RAB Electrical Equipment Rooms HVAC Computer Model Data Inputs and Outputs,” Revision 2, stated that the design criteria of the EER ventilation system is to achieve a room temperature less than 104°F with an outside air temperature of 93°F. The Unit 1 EERs consist of the A switchgear room, B switchgear room, static inverter room, cable spreading room, and two battery rooms. Calculation PSL-1FJM-91-001, evaluated the design basis cases of the EER ventilation system, which consist of all safety-related supply and exhaust fans in operation and no credit given for non-safety grade air conditioning units. The calculation also addressed the assumed worst-case single failure of the system, which was the loss of one of the redundant supply fans (HVS-5A or HVS-5B) and no credit given for non-safety related air conditioning units. The team questioned the validity of the assumption that failure of one of the two supply fans was the most limiting single failure because the failure of either EDG would cause the loss of one of the supply fans as well as half of all discharge fans.

As a result of the team's questions, the licensee developed a preliminary GOTHIC computer model of the EER ventilation system to address these additional single failure scenarios. The analysis reduced the originally assumed accident heat loads in the EERs and used best available flowrates gathered during field tests in 2010. Preliminary results demonstrated that, during a design basis event, the failure of a single supply fan was still the most limiting scenario, with elevated temperatures of up to 108.8ºF experienced in the static inverter room and 107ºF in the cable spreading room, while the loss of the 1A EDG would result in a temperature of 108.6ºF in the static inverter room. This increase of EER temperatures from 104ºF to 108.8ºF represents an approximately 30% reduction in operating temperature margin. Based on these results, it was determined that the EERs would not be maintained under the intended design temperature of 104ºF, however, would remain less than 120ºF, and therefore, the emergency electrical equipment located in the rooms would remain capable of performing their functions during the short periods of time necessary. As a result of this analysis, the licensee planned to re-balance flow rates in the EERs or revise the equipment qualification temperatures for equipment located in the EERs.

Analysis: The failure to verify the adequacy of design of the EER ventilation system was a performance deficiency and a failure to meet 10 CFR Part 50, Appendix B, Criterion III, "Design Control." The performance deficiency was determined to be more than minor because it was associated with the Design Control attribute of the Mitigating Systems cornerstone and adversely affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically, the re-analysis of the ventilation system resulted in a reduction in temperature margin, which could impact the reliability and capability of emergency electrical equipment in the EERs. The team used IMC 0609, Att. 4, "Initial Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0609, App. A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because the finding was a deficiency affecting the design of a mitigating SSC, and the SSC maintained its operability or functionality. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: Title 10 CFR Part 50, Appendix B, Criterion III, "Design Control," required, in part, that "design control measures shall provide for verifying or checking the adequacy of design, such as by the use of simplified calculational methods." Licensee calculation PSL-1FJM-91-001, "PSL-1 RAB Electrical Equipment Rooms HVAC Computer Model Data Inputs and Outputs," Revision 2, stated that the design criteria of the EER ventilation system was to achieve a room temperature less than 104°F with an outside air temperature of 93°F. Contrary to the above, since original licensing, the licensee failed to verify the adequacy of design of the EER ventilation system. Specifically, the design calculation did not evaluate the ability of the system to maintain the EERs within design temperatures. The licensee planned to re-balance flow rates in the EERs or revise the equipment qualification temperatures for equipment located in the EERs. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. The violation was entered into the licensee's corrective action program as ARs 2111358 and 2117193. (NCV 05000335/2016008-05, "Failure to Verify the Adequacy of Design of Unit 1 Electrical Equipment Room Ventilation System.")

.3 Operating Experience

a. Inspection Scope

The team reviewed three operating experience issues for applicability at the St. Lucie Plant. The team performed an independent review for these issues and, where applicable, assessed the licensee's evaluation and disposition of each item. The issues that received a detailed review by the team included:

- Generic Safety Issue, Item B-56, "Diesel Reliability"
- NRC Regulatory Information Summary 2015-06, "Tornado Missile Protection"
- NRC Information Notice 93-64, "Periodic Testing and Preventive Maintenance of Molded Case Circuit Breakers"

b. Findings

.01 Failure to Provide a Missile-Protected Intertie

Introduction: The NRC identified a finding of very low safety significance (Green) for the licensee's failure to properly provide a completely missile-protected intertie from the Unit 1 diesel oil transfer pumps to the Unit 2 diesel oil storage tanks.

Description: In Supplement 2 (dated March 1, 1976) of the operating license safety evaluation report (SER), the NRC accepted a tornado-missile protected intertie as defined in Amendment 47 of the licensee's final safety analysis report (FSAR) as a means of meeting the intent of Regulatory Guide 1.76, "Design-Basis Tornado and Tornado Missiles for Nuclear Power Plants." Amendment 47 (dated July 9, 1975), as well as Appendix 3F of the current UFSAR, stated that a "missile-protected intertie will be provided between the Unit 1 diesel oil transfer pumps and the Unit 2 diesel oil storage tanks."

During a walk down of the diesel oil fuel system, the team noted that current design of the system and intertie does not reflect the configuration committed to by the licensee. While an intertie does exist between the Unit 1 diesel oil transfer pumps and the Unit 2 diesel oil storage tanks, it does not accurately conform to the design described in the FSAR that was approved by the NRC in Supplement 2 of the operating license SER. Specifically, a section of piping that serves as the flow path for the intertie (between the Unit 1A and 1B diesel oil storage tanks) is not tornado-missile protected, and failure of that section to a tornado missile would prevent the intertie from completing its intended function. As a result of this finding, the licensee entered ARs 2114557 and 2109049 into their corrective action program.

Analysis: The failure to provide a tornado-missile protected intertie as described in the FSAR to meet the commitment of Supplement 2 of the operating license SER was a performance deficiency. The performance deficiency was determined to be more than minor because it adversely affected the Protection Against External Factors attribute of the Mitigating Systems cornerstone objective which ensures the availability, reliability, and capability of systems that respond to initiating events. Specifically, a postulated tornado missile could damage the unprotected section of piping, rendering the intertie unable to complete its intended function, thereby reducing the licensee's capability to mitigate a design basis tornado event. The team used IMC 0609, Att. 4, "Initial

Characterization of Findings," issued June 19, 2012, for Mitigating Systems, and IMC 0609, App. A, "The Significance Determination Process (SDP) for Findings At-Power," issued June 19, 2012, and determined the finding to be of very low safety significance (Green) because it did not involve the total loss of any safety function, nor was it identified by the licensee through probabilistic risk assessment, Individual Plant Evaluation of External Events (IPEEE), or similar analysis that would have contributed to external event initiated core damage accident sequences. This finding was not assigned a cross-cutting aspect because the issue did not reflect current licensee performance.

Enforcement: This finding does not involve enforcement action because no violation of a regulatory requirement was identified. (FIN 05000335/2016008-06, "Failure to Provide a Missile-Protected Intertie.")

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

On March 4, 2016, the team presented the inspection results to Mr. Robert Coffey and other members of the licensee's staff. On April 11, 2016, a telephone re-exit was conducted to present the final inspection results to Mr. Mike Snyder and other members of the licensee's staff. Proprietary information that was reviewed during the inspection was returned to the licensee or destroyed in accordance with prescribed controls.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
G. Arntson, Principal Nuclear Engineer, ERRT
L. Berry, Principal Nuclear Engineer, Licensing
S. Catron, Nuclear Fleet Licensing CFAM
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R. Coffey, Nuclear Plant General Manager
S. Cornell, Principal Nuclear Engineer, Mechanical Design
C. Costanzo, Site Vice President
E. Feightner, Nuclear Training Operations Supervisor
K. Fleischer, Consultant
D. Glymph, Principal Nuclear Engineer, Programs Engineering
M. Haskin, Nuclear Projects Site Manager
E. Hollowell, Principal Engineer, Civil Design
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NRC personnel:
J. Hanna, Senior Reactor Analyst, Division of Reactor Projects, Region II
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R. Reyes, Resident Inspector, Division of Reactor Projects, St. Lucie Resident Office

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened & Closed

05000335, 389/2016008-01	NCV	Failure to Consider Elevated Temperature Effects on MOV Actuator Output Capability (Section 1R21.2.b.01)
05000335/2016008-02	NCV	Failure to Update UFSAR to Reflect Station Blackout Coping Time Basis (Section 1R21.2.b.02)
05000335/2016008-03	NCV	Inadequate Testing of 125VDC MCCBs (Section 1R21.2.b.03)
05000335/2016008-04	NCV	Failure to Identify Degraded Condition of Unit 1 Electrical Equipment Room Supply Fan Gravity Dampers (Section 1R21.2.b.04)
05000335/2016008-05	NCV	Failure to Verify the Adequacy of Design of Unit 1 Electrical Equipment Room Ventilation System (Section 1R21.2.b.05)
05000335/2016008-06	FIN	Failure to Provide a Missile-Protected Intertie (Section 1R21.3.b.01)

LIST OF DOCUMENTS REVIEWED

Procedures

0-EMP-100.16, Molded-Case Breaker Tests, Rev. 17
0-GMM-99.23, Sheave Alignment and Belt Tensioning, Rev. 1, completed 4/26/10
0-NOP-59.06, Fuel Oil Transfer Between Diesel Oil Storage Tanks, Rev. 11
0-NOP-99.02, Watchstation General Guidelines, Rev. 36
0-PME-47.01, Periodic Maintenance of 480V Load Centers and Motor Control Centers, Rev. 26
0-PME-47.10, Periodic Maintenance of Masterpact Type NW 3000 Ampere Breaker with Micrologic 5.0A Trip Unit, Rev. 7
0-PME-47.11, Periodic Maintenance of Masterpact Type NW 1600 Ampere Breaker with Micrologic 5.0A Trip Unit, Rev. 6
0-PME-47.12, Periodic Maintenance of Masterpact Type NT 800 Amp Breakers with Micrologic 5.0A/5.0P Trip Unit, Rev. 6
0-PME-49.05, St. Lucie Plant, Preventive Maintenance Procedure, 120 VAC Instrument Bus Inverters and Isolimiters Maintenance, Rev. 7
1-00010123, Administrative Control of Valves, Locks and Switches St. Lucie Unit 1, Rev. 223
1-ADM-09.23, Time Critical Action Program, Rev. 4
1-AOP-02.03, Charging and Letdown, Rev. 7
1-AOP-08.02, Steam Generator Tube Leak, Rev. 9
1-AOP-09.02, Auxiliary Feedwater, Rev. 7
1-AOP-18.01, Instrument Air Malfunction, Rev. 8
1-ARP-06-A00, 1A Emergency Diesel Generator Panel, Rev. 11
1-EOP-03, Loss of Coolant Accident LOCA, Rev. 37
1-EOP-04, Steam Generator Tube Rupture SGTR, Rev. 30
1-EOP-05, Excess Steam Demand ESD, Rev. 29
1-EOP-06, Total Loss of Feedwater TLOF, Rev. 26
1-EOP-09, Loss of Offsite Power/Loss of Forced Circulation, Rev. 26
1-EOP-09, Appendices/Figures/Tables/Data Sheets St. Lucie Unit 1, Rev. 57
1-EOP-10, St. Lucie Unit 1 Emergency Operating Procedure, Station Blackout SBO, Rev. 26
1-EOP-15, Functional Recovery FR, Rev. 38
1-EOP-99, St. Lucie Unit 1 Emergency Operating Procedure, Appendices/Figures/Tables/Data Sheets, Rev. 57
1-GOP-305, Reactor Plant Cooldown- Hot Standby to Cold Shutdown, Rev. 55
1-GOP-403, Reactor Plant Heatup- Mode 4 to Mode 3, Rev. 43
1-NOP-03.11, HPSI System Initial Alignment, Rev. 2
1-NOP-59.02A, 1A Emergency Diesel Generator Operations, Rev. 22
1-NOP-59.02B, 1B Emergency Diesel Generator Operations, Rev. 21
1-NOP-99.07, Operations Hard Cards, Rev. 7
1-ONP-100.02- Control Room Inaccessibility, Rev. 37
1-OSP-03.02A, 1A LPSI Flow Test, Rev. 8, dated 3/27/15
1-OSP-03.02B, 1B LPSI Flow Test, Rev. 6, dated 10/5/13
1-OSP-07.05A, Reverse Flow Testing of RWT Discharge Check Valve V07120, Rev. 0, completed 11/4/08 and 1/24/12
1-OSP-07.05B, Reverse Flow Testing of RWT Discharge Check Valve V07119, Rev. 0, completed 11/14/08 and 1/24/12
1-OSP-09-02A, 1A Auxiliary Feedwater Pump Refueling Shutdown Pump and Valve Test, Rev. 6, completed 4/9/15
1-OSP-52.01B, St. Lucie Unit 1, Operations Surveillance Procedure, Surveillance Test of Degraded Grid Voltage B Train, Rev. 7, completed 2/21/16
1-OSP-59.01A, 1A Emergency Diesel Generator Monthly Surveillance, Rev. 34

1-OSP-59.01B, 1B Emergency Diesel Generator Monthly Surveillance, Rev. 35
1-OSP-59.01B, St. Lucie Unit 1, Operations Surveillance Procedure, 1B Emergency Diesel Generator Monthly Surveillance, Rev. 33, completed 11/16/15
1-OSP-59.01B, St. Lucie Unit 1, Operations Surveillance Procedure, 1B Emergency Diesel Generator Monthly Surveillance, Rev. 34, completed 12/14/15 and 1/11/16
1-OSP-69.13B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for SIAS/CIS/CSAS - Train B, Rev. 9, completed 2/15/12
1-OSP-69.13B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for SIAS/CIS/CSAS - Train B, Rev. 13, completed 10/22/13
1-OSP-69.13B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for SIAS/CIS/CSAS - Train B, Rev. 21, completed 4/28/15
1-OSP-69.14B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for EDG Start on SIAS without LOOP and 24-Hour Load Run - Train B, Rev. 1, completed 2/15/12
1-OSP-69.14B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for EDG Start on SIAS without LOOP and 24-Hour Load Run - Train B, Rev. 5, completed 10/3/13
1-OSP-69.14B, St. Lucie Unit 1, Operations Surveillance Procedure, ESF - 18 Month Surveillance for EDG Start on SIAS without LOOP and 24-Hour Load Run - Train B, Rev. 8, completed 4/10/15
1-OSP-99.08A, A Train Quarterly Non Check Valve Cycle Test, Rev. 7, completed 9/2/15
1-OSP-99.08A, A Train Quarterly Non Check Valve Cycle Test, Rev. 10, completed 10/1/15 and 12/12/15
1-OSP-100.01, St. Lucie Unit 1, Operations Surveillance Procedure, Schedule of Periodic Tests, Checks and Calibrations Week 1, Rev 67, completed 1/2/16
1-OSP-100.01, Schedule of Periodic Tests, Checks, and Calibrations Week 1, Rev. 68
1-OSP-100.02, St. Lucie Unit 1, Operations Surveillance Procedure, Schedule of Periodic Tests, Checks and Calibrations Week 2, Rev 68, completed 1/9/16
1-OSP-100.03, St. Lucie Unit 1, Operations Surveillance Procedure, Schedule of Periodic Tests, Checks and Calibrations Week 3, Rev 63, completed 1/16/16
1-PME-59-02, St. Lucie, Unit 1, Preventive Maintenance Procedure, 1B Emergency Diesel Electrical Periodic Maintenance and Inspection, Rev. 14
1-PME-100.28, Molded Case Circuit Breaker Testing Using Oden at High Current Test Set, Rev. 13
1-PMI-59.03A, 1A Emergency Diesel Generator Day Tanks Level Switch Functional Test, Rev. 10
1-SMI-09.43A, Auxiliary Feedwater Actuation System Monthly Functional Test Channel A, St. Lucie, Unit 1, Rev. 6
2-ADM-09.23, Time Critical Action Program, Rev. 5
2-EOP-01, Standard Post Trip Actions, Rev. 33
2-EOP-06, Total Loss of Feedwater, Rev. 26
2-EOP-09, Appendices/Figures/Tables/Data Sheets St. Lucie Unit 2, Rev. 52
2-EOP-10, St. Lucie Unit 2 Emergency Operating Procedure, Station Blackout SBO, Rev. 24
2-EOP-15, Functional Recovery, Rev. 44
2-EOP-99, St. Lucie Unit 2 Emergency Operating Procedure, Appendices/Figures/Tables/Data Sheets, Rev 52
2-PMM-25.05X, 2-HVS-5A/B RAB Switchgear Room Supply Fan, Rev. 0, completed 5/4/10
ADM-17.08, Implementation of 10 CFR 50.65, The Maintenance Rule, St. Lucie Plant, Appendix E, Emergency Diesel Generator Reliability Program, Rev. 26
ADM-27.21, Ladder Usage and Compliance, Rev. 3
ADM-29.01A, Inservice Testing (IST) Program for Pumps and Valves, Rev. 18

EN-AA-205-1100, Design Change Packages, Rev. 13
EN-AA-205-1102, Temporary Configuration Changes, Rev. 6
MSP-25.01, Gravity Damper Adjustment, Rev. 0D, completed 4/2/07
NADP-3, Managing the Operating Experience Program, Rev. 3
OP-1-0010125A, Surveillance Data Sheets, Revs. 156, 160, and 164, completed 3/3/14, 6/3/14, 9/3/14, 4/6/15 and 4/23/15
PI-AA-01, Corrective Action Program and Condition Reporting, Rev. 3
PI-AA-100, Condition Assessment and Response, Rev. 8
PI-AA-100-1008, Condition Evaluation, Rev. 8
PI-AA-104-1000, Corrective Action, Rev. 6
QI-11-PR/PSL-1, Test Control, Rev. 22
SWO 15-0001, 1B & 2B Startup Transformer Maintenance, completed 1/13/15

Drawings
2998-G-086, Sh. 1, Flow Diagram Miscellaneous Systems, Rev. 56
8770-1018, Hutchinson Island Plant Unit #1, 4.16 KV Indoor Metal Clad Swgr - One Line Diag - Assy. 1B3 & 1A3, Rev. 3
8770-1377, SI Motor Valve 3654, 3656 SUP 8770-794, Rev. 6
8770-4823, 24 in 150 lb Check Valve P/L I-V-07-1660, Rev 5
8770-11437, St. Lucie Plant Unit 1, Diesel Generator 1B Idle Start-Stop Panel Schematic Diagram, Sh. 1 of 3, Rev. 3
8770-11438, St. Lucie Plant Unit 1, Diesel Generator 1B Idle Start-Stop Panel Schematic Diagram, Sh. 2 of 3, Rev. 4
8770-11439, St. Lucie Plant Unit 1, Diesel Generator 1B Idle Start-Stop Panel Schematic Diagram, Sh. 3 of 3, Rev. 1
8770-16313, St. Lucie Plant Unit 1, Schematic, 10KVA Inverter, Rev. 0
8770-B-326, Sh. 963, 966, 967, and 969, Hutchinson Island Plant - Unit No. 1, Schematic Diagram, Diesel Generator 1B Bkr, Rev. 24
8770-B-327, Sh. 277, Control Wiring Diagram HPSI Pump Discharge Valve V-3654, Rev. 9
8770-B-327, Sh. 279, Control Wiring Diagram HPSI Pump Discharge Valve V-3656, Rev. 10
8770-B-327, Sh. 290, St. Lucie, Unit 1, Control Wiring Diagram, Containment Spray Pump 1B, Rev. 17
8770-B-327, Sh. 630, St. Lucie, Unit 1, Control Wiring Diagram, Auxiliary Feedwater Pump 1B, Rev. 30
8770-B-327, Sh. 937, St. Lucie, Unit 1, Control Wiring Diagram, 4160V Swgr 1B3 Incoming Feeder from Bus 1B2, Rev. 13
8770-B-327, Sh. 939, St. Lucie, Unit 1, Control Wiring Diagram, 4160V Swgr 1B3 Fdr to Bus 1AB, Rev. 14
8770-B-327, Sh. 940, St. Lucie, Unit 1, Control Wiring Diagram, 4160V Swgr 1AB Incoming Feeder from Bus 1A3, Rev. 7
8770-B-327, Sh. 941, St. Lucie, Unit 1, Control Wiring Diagram, 4160V Swgr 1AB Incoming Feeder from Bus 1B3, Rev. 12
8770-B-327, Sh. 948, St. Lucie, Unit 1, Control Wiring Diagram, 480V Sta. Serv Xfmr 1B2, 4160V Fdr Bkr, Rev. 14
8770-B-327, Sh. 963, St. Lucie, Unit 1, Control Wiring Diagram, Diesel Generator 1B Bkr, Rev. 24
8770-B-327, Sh. 964, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Relaying & Metering, Rev. 30
8770-B-327, Sh. 965, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Grd & Diff Relaying, Rev. 8

8770-B-327, Sh. 966, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Lockout Relay, Rev. 20
8770-B-327, Sh. 967, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Start Ckts, Rev. 22
8770-B-327, Sh. 968, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Remote Control Voltage, Rev. 13
8770-B-327, Sh. 969, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Diesel Generator 1B Start Solenoids, Rev. 18
8770-B-327, Sh. 1009, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Instrument Buses & Inverters 1MA & 1MC, Rev. 17
8770-B-327, Sh. 1010, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, Instrument Buses & Inverters 1MB & 1MD, Rev. 19
8770-B-327, Sh. 1128, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, D. G. 1B Hydr. Gov. Speed Setting Motor Control, Rev. 1
8770-B-327, Sh. 1133, Hutchinson Island Plant - Unit No. 1, Control Wiring Diagram, D-G 1B Fuel Prime Pump, Rev. 8
8770-B-327, Sh. 1136, St. Lucie, Unit 1, Control Wiring Diagram, Diesel Gen. Fuel Oil Transfer Pump 1B, Rev. 13
8770-B-327, Sh. 1297, St. Lucie, Unit 1, Control Wiring Diagram, 4160V Swgr 1AB (1-20501) Station Blackout Tie Breaker, Rev. 1
8770-B-327, Sh. 1620, St. Lucie Plant, Unit 1, Control Wiring Diagram, Diesel Generator 1B Remote Control - Governor, Rev. 0
8770-B-327, Sh. 1920, St. Lucie, Unit 1, Control Wiring Diagram, Diesel Gen. Fuel Oil Transfer Pump 1B Level Switches, Rev. 1
8770-G-078, Sh. 110B, Flow Diagram Reactor Coolant System, Rev. 27
8770-G-078, Sh. 130A/B, 131A/B, Flow Diagram Safety Injection System, Rev. 39
8770-G-080, Sh. 4, Flow Diagram Feedwater and Condensate, Rev. 44
8770-G-085, Sh. 2A, 2C, and 3, Flow Diagram Instrument Air System, Rev. 48
8770-G-086, Flow Diagram Miscellaneous Systems, Rev. 53
8770-G-088, Sh. 1-2, Flow Diagram Containment Spray and Refueling Water Systems, Rev. 59
8770-G-096, Sh. 1A, Flow Diagram for EDG Engine 1A1, Rev. 21 and 23
8770-G-096, Sh. 1B, Flow Diagram for EDG Engine 1A2, Rev. 19 and 21
8770-G-125, Sh. SI-N-7, Large Bore Piping Isometric Safety Injection, Rev. 4
8770-G-272, St. Lucie Plant, Unit 1, Main One Line Diagram, Rev. 20
8770-G-272A, St. Lucie Plant, Combined Main and Auxiliary One Line Diagram, Rev. 17
8770-G-274, Hutchinson Island Plant, Unit 1, Auxiliary One Line Diagram, Rev. 24
8770-G-275, Sh. 1, St. Lucie Plant, Unit 1, 6.9 KV Swgr. & 4.16 KV Swgr. One Line Wiring Diagram, Sh. 1, Rev. 28
8770-G-275, Sh. 2, St. Lucie Plant, Unit 1, 480V Swgr. & Pressurizer Htr. Bus One Line Wiring Diagram, Sh. 2, Rev. 34
8770-G-275, Sh. 4, St. Lucie Plant, Unit 1, 480V Motor Control Centers One Line Wiring Diagram, Sh. 4, Rev. 28
8770-G-275, Sh. 6, 480V Motor Control Centers One Line Wiring Diagram SH6, Rev. 30
8770-G-275, Sh. 8, St. Lucie Plant, Unit 1, 480V Motor Control Centers One Line Wiring Diagram, Sh. 8, Rev. 27
8770-G-332, Sh. 1, Hutchinson Island Plant, Unit No. 1, 480V Miscellaneous, 125V D-C and Vital A-C One Line, Sh. 1, Rev. 27
8770-G-417, St. Lucie Plant Switchyard Main One Line Diagram, Rev. 38

Calculations

129154-E-0001, Unit 1 AC Electrical System Load Flow, Short Circuit, and Motor Starting Analyses for EPU, Rev. 1
129154-M-0112, Post LOCA Reactor Auxiliary Building ECCS Pump Area Temperature Transient Analysis, Rev. 1
2576C, St. Lucie MOV Periodic Verification Classification, Rev. 0
DC-066, Required Thrust / Weak Link Calculations, Rev. 0
JPN-PSL-SEMP-93-031, Substantial Safety Hazard Evaluation of Limitorque Valve Actuators with AC Motors, Rev. 2
PSL-0FJE-90-011, Station Blackout Standby Loads, Rev. 3
PSL-1FJE-90-002, GL 89-10 MOV Cable Voltage Drop, St. Lucie Unit 1, Rev. 12
PSL-1FJE-90-013, St. Lucie Unit 1 Emergency Diesel Generator 1A and 1B Electrical Loads, Rev. 8
PSL-1FJE-90-026, St. Lucie - Unit 1 Short Circuit, Voltage Drop and PSB-1 Analysis, Rev. 7
PSL-1FJM-91-001, PSL-1 RAB Electrical Equipment Rooms HVAC Computer Model Data Inputs and Outputs, Rev. 2
PSL-1FJE-91-002, Instrument Inverters 1A, 1B, 1C & 1D AC Output Loading, Rev. 8
PSL-1 FJM-91-004, Unit 1 Diesel Generator System Discharge Pressure Discharge Flow and Net Positive Suction Head, Rev. 1
PSL-1FJE-92-010, St. Lucie, Unit 1, PSB-1 and Loss of Voltage Undervoltage Relay Setpoints, Rev. 2
PSL-1FJM-91-017, NRC Generic Letter 89-10 Gate / Globe Valve Motor-Operator Evaluations, Rev. 23
PSL-1FJM-92-020, Generic Letter 89-10 Differential Pressure Calculation for St. Lucie No. 1 HPSI and AFW Motor Operated Valves, Rev. 6
PSL-1FJM-92-031, GL 89-10 Operator Calculation for SLS1 #1 Motor Operated Valves V-3656, Rev. 1
PSL-1FJM-92-033, GL 89-10 Operator Calculation for St. Lucie Unit 1 Motor Operated Valves V-3654, Rev. 1
PSL-1FJR-94-007, St. Lucie Unit 1 89-10 and 96-05 MOV Prioritization, Rev. 3
PSL-1FSE-03-009, Unit 1 Electrical System Computer Model (ETAP) Documentation, Rev. 3
PSL-1FSE-04-001, Unit 1 Motor Starter Minimum Voltage Calculation, Rev. 0
PSL-1FSE-05-002, Unit 1 125VDC System ETAP Model and Analysis, Rev. 2
PSL-1FSE-09-001, Unit 1 Electrical Coordination Study and Appendix R Evaluation, Rev. 1
PSL-2EJM-73-005, Instrument Air - SCFM Requirements, Rev. 0
PSL-2FJR-94-008, St. Lucie Unit 2 89-10 and 96-05 MOV Prioritization, Rev. 2

Design Basis Documents

Design Basis Document, (DBD)-120 V-AC-1, Class 1E 120V AC Power System, Rev. 4
DBD-480V-AC-1, 480 VAC Distribution System, Rev. 4
DBD-4160 VAC-1, 4160 VAC Distribution System, Rev. 4
DBD-EDG-1, Emergency Diesel Generator System, Rev. 6
DBD-HPSI-1, High Pressure Safety Injection, Rev. 5
DBD-HVAC-1, Safety Related HVAC Systems, Rev. 6
DBD-SLI-SBO-1, Station Blackout Criteria, Rev. 4

Self-Assessment Reports

AR 01613053, St. Lucie Engineering Self-Assessment, Component Design Basis Inspection, dated August 2012
AR 02003223, St. Lucie Engineering Self-Assessment, Component Design Basis Inspection, dated December 2015

Condition Reports

00470455	01796129	01913027	02040189	02069073
00480667	01797382	01913534	02040192	02074774
00485688	01821442	01928517	02040628	02075193
00525030	01822362	01929427	02040630	02080102
00571919	01826000	01938220	02040632	02080524
01602763	01839852	01954403	02041466	02088250
01646434	01843526	01958718	02041605	02088305
01732122	01871532	01967254	02042286	02088430
01735108	01874866	01968306	02050986	02089332
01735718	01876061	01990433	02053060	02093509
01736593	01894687	02014407	02054594	02094382
01788523	01896375	02022084	02055730	02096920
01788563	01897684	02022092	02057746	02106799
01789328	01903981	02028899	02061423	02106886
01792735	01904412	02030822	02061798	02107939
01795236	01904414	02036858	02064366	2010-9314
01795994	01908492	02037635	02064949	

Work Orders

30016152	38021231	40098729	40201196	40359412
33000672	38026319	40116329	40216548	40368673
33003927	38026320	40145945	40247139	40375900
34019438	38028221	40145946	40269198	40381344
36015935	39005938	40160856	40282774	40386101
37000230	39009446	40161393	40330824	
37015831	40017992	40167734	40337474	
37020428	40018223	40192846	40359214	
38011362	40018224	40199373	40359215	

Miscellaneous Documents

00000-PE-707, General Engineering Specification for Nuclear Service Valves, dated 4/28/70
19367-487-705, Project Specification for Nuclear Service Motor Operated Valves, dated 1/14/71
87706933, Operating and Maintenance Instructions Airolite Louvers for Hutchinson Island Plant
ALAB-603, Atomic Safety and Licensing Appeal Board Decision, In the Matter of Florida Power & Light Company (St. Lucie Nuclear Power Plant, Unit 2), dated July 30, 1980
EC-246569, Unit 1, Design Change Package Description, Power Uprate, EPU Umbrella Package, Rev. 12
EC-246589, Attachment 7.5, Summary of Regulatory Commitments for Extended Power Uprate, Rev. 4
ER-AA-116, Motor Operated Valve Program, Rev. 1
ETAP PowerStation 4.0 User Guide, Chapter 13, Short-Circuit Analysis, Copyright 2001
FA-14014145-1, NLI Failure Analysis Report for Florida Power & Light Company, Magnum Replacement Circuit Breaker, Rev. 0, March 2011
Final Safety Analysis Report, Amendment 38
Final Safety Analysis Report, Amendment 47
FLO-8770.111, Ebasco Spec Steel Station Valves 2-1/2" and Longer, Rev. 2
FPL Letter to NRC, L-91-311, St Lucie Units 1 and 2, Safety Evaluation on Station Blackout Rule, dated 11/26/91
FPL Letter to NRC, No. L-2012-291, "St. Lucie Units 1 and 2, FPL Response to NRC Bulletin 2012-01, Design Vulnerability in Electric Power Systems, dated 10/25/12

FPL SL1-26, Check Valve Final Test Report, dated 4/3/15
FPL-1, NextEra Energy Quality Assurance Topical Report, Rev. 18
Functionality Assessment for AR 2108868, dated 3/3/2016 (without Shift manager Approval)
JPN-PSL-SEMP-91-007, Safety Evaluation for Reactor Auxiliary Building Electrical Equipment & Battery Room HVAC, Rev. 1, dated 8/2/92
LTAM PSL-11-0365, EDG Voltage Regul./Excit. (SL 1-25) Replacement, 2/3/09
Maintenance Strategy, V07119, dated 12/8/10
Maintenance Strategy, V07120, dated 12/8/10
Maintenance Strategy, V07172, dated 12/8/10
Maintenance Strategy, V07174, dated 12/8/10
Maintenance Strategy, V3654, dated 2/4/16
Maintenance Strategy, V3656, dated 5/11/11
NRC Bulletin 2012-01, Design Vulnerability in the Electric Power Systems
NRC Information Notice 12-03, Design Vulnerability in Electric Power System
NRC Letter to FPL, St. Lucie, Units 1 and 2 - 10 CFR 50.63 - Station Blackout (TAC Nos. 68608 and 68609), dated 9/12/91
NRC Letter to FPL, St. Lucie Plant, Units 1 and 2 - Response to 10 CFR 50.63 Station Blackout (TAC Nos. M68608 and M68609), dated 6/11/92
NUMARC 87-00, Guidelines and Technical Bases for NUMARC Initiatives Addressing Station Blackout at Light Water Reactors, Rev. 0 (November 1987) and Rev. 1 (August 1991)
NUMARC 93-01, Nuclear Energy Institute Industry Guideline for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Rev. 4A (April 2011)
OPS ANPO data logger for Startup Transformers, dated 2/3/16
PC/M100-98, RV-3 Damper Removal, Rev. 0
PC/M 119-81, Unit 1 – Unit 2 Instrument Air Interties, dated 3/30/82
PCR 02108987, 1-OSP-99.08A- A Train Quarterly Non Check Valve Cycle Test
PCR 02112342, 1-ONP-100.02- Control Room Inaccessibility
PDM-2015-1B Startup Transformer, dated 4/19/15
PMCR 01966075, Create 188 New PMs for Individual Breakers, dated 5/5/14
PO 9002051 Supp. 6, Certification of Equipment, dated 1/11/72
PO 9002051, Certification of Equipment, dated 1/6/72
PO NY-422263, Certificate of Conformance, dated 5/3/73
PSL-ENG-SEMS-97-018, Periodic Verification of Design Basis Capability of Safety Related Motor Operated Valves for NRC Generic Letter 96-05, Rev. 6
PSL-ENG-SEOS-08-063, IST Check Valve Condition Monitoring Program, Rev. 0
PSL-MRSS-007, Maintenance Rule System Summary Containment Spray, dated 6/2/14
PSL-MRSS-03A, Maintenance Rule System Summary High Pressure Safety Injection (HPSI), dated 6/2/14
PSL-MRSS-18B, Maintenance Rule System Summary Instrument Air (IA), dated 12/16/14 and 2/23/16
Regulatory Guide 1.9, Selection, Design, Qualification, and Testing of Emergency Diesel Generator Units Used as Class 1E Onsite Electric Power Systems at Nuclear Power Plants, Rev. 3 (July 1993)
Regulatory Guide 1.160, Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Rev. 1 (January 1995)
RIR 91512, QC Inspection Report for Bkr. 1-60213, dated 12/20/00
Safety Evaluation of the St. Lucie Plant Unit No. 1, dated November 8, 1974
Safety Evaluation by the Office of Nuclear Reactor Regulation, Station Blackout Rule, Florida Power and Light Company, St. Lucie, Units 1 and 2, dated 9/12/91
Safety Evaluation Report, St. Lucie, Units 1 and 2 – 10 CFR 50.63 – Station Blackout, Sep 17, 1991

Safety Evaluation Report, St. Lucie Plant, Unit 1- Issuance of Amendment Regarding Extended Power Uprate, dated July 9, 2012
Simulator Exercise Guide PSL OPS 0714029, Rev. 15, dated 8/19/14
Solidstate Controls Inc. 2998-21201, St Lucie Plant Unit No. 1 & 2, 10 KVA Inverter and Isolimiter Instruction and Operating Manual, Rev.1
STD-M-003, Engineering Guidelines for Sizing and Evaluation of Limitorque Motor Operators, Rev. 6
St. Lucie Plant – 230kv Bus Impedance Summary report, dated 2/9/15
Supplement No. 1 to the Safety Evaluation of the St. Lucie Plant Unit No. 1, dated May 9, 1975
Supplement No. 2 to the Safety Evaluation of the St. Lucie Plant Unit No. 1, dated March 1, 1976
Supplemental Safety Evaluation, Station Blackout Rule (10 CFR 50.63), dated June 11, 1992
System Health Report, PSL Unit 1, 50 - 125 V DC, Q2/Q4-2013, Q2/Q4-2014, Q2/Q4-2015
System Health Report, PSL Unit 1, 52 - Electrical Distribution, Q2/Q4-2013, Q2/Q4-2014, Q2/Q4-2015
System Health Report, PSL Unit 1, 59 - Emergency Diesel Generator (EDG), Q2/Q4-2013, Q2/Q4-2014, Q2/Q4-2015
System Health Report, PSL Unit 2, 59 - Emergency Diesel Generator (EDG), Q1/Q2/Q3/Q4-2015

Condition Reports Written Due to this Inspection
02107929, No Unit 1 Procedure for Assembly of Safety Related Solenoid Valves SE-59-1A/B
02107932, No Unit 2 Procedure for Assembly of Safety Related Solenoid Valves SE-59-1A1, A2, B1, B2
02107943, IST Program Check Valve Procedural Test Method Description
02108278, 480V SWGR 1A2 C&I Not Completed
02108837, Cart Over 4FT Tall Not Properly Stored
02108839, Carts Not Properly Stored
02108853, 1B Startup Transformer Housekeeping Issues
02108858, During a Station Walk Down an NRC Inspector Noted a Local Alarm on the “Notifier” Alarm Panel in the 1B Switchgear Room
02108862, During a Plant Walk Down an NRC Inspector Noted an Active System Trouble Alarm on a Local “Notifier” Panel used for Fire Alarm System Testing
02108868, Electrical Equipment Rooms Supply Fan, HVS-5A/B, Discharge Gravity Dampers Not Functioning in Close Direction Not Evaluated
02108873, U1 HVE-12 Inlet Screen was Modified Without Evaluation
02108976, V3656 Cycle Test
02108987, NRC Identified an Enhancement to 1-OSP-99.08A
02109046, Revise Maintenance Rule to Include Function 03A-07
02109049, UFSR Unclear Regarding DOST U1 – U2 Intertie
02109116, Question 1-EOP-09 Addressing EER Room Ventilation Operator Actions
02109132, Revise DBD-HPSI-1 SEC 7.5 for V3654 V3656 Function
02109231, Alarming Fire Panel
02109417, Unit 1 UFSAR Chapter 8 Document Discrepancy
02109447, Unit 1 Does Not Have Sufficient Oil for Seven Day Supply and Operating Procedure Doesn’t Caution the Operators to Suspend the Operation of One EDG in Order to Conserve Fuel Oil
02109943, Dimensional Disparity Between Drawings for the Elevation of the Base of the Diesel Oil Storage Tank
02110968, Elevated Temperature for MOV Operation
02111157, Emergency Operating Procedure Enhancements

02111337, Inadequate Technical Review for EC237137 Where the Blades of the Damper of RV-3 Fan Were Removed
02111358, HVA/ACC-4 or 5 Credited in Review of HVS-5A/B Single Failure. Calculation PSL-1FSM-91-001, Rev. 2 Computer Model did not Address all Cases
02111444, EDG Load Calc. - Cont. Spray Starts @35 Sec After AFW
02111930, 1-PMI-59.03A is Wrong Addressing Day Tank Levels and Actions Associated with the Levels
02112344, 1-ONP-100.02 Auxiliary HPSI Header Alignment
02112375, 10 CFR 50.59 Screening for MOV Covers
02112424, Instrument Air Cross-tie Testing
02112853, Unit 1 EDG Load Calc at +5% High Tech. Spec. Volt.
02113113, 1B EDG 125VDC Feeder Breaker Testing PM Overdue
02113416, DBD-EDG-1 Component Functions for Fuel Oil Transfer Pump Discharge Check Valves V17201 and V17214 Missing Function to Automatically Close to Prevent Backflow from the Day Tank to the Storage Tank
02113920, EDG Reliability Performance Monitoring Potential Gap
02114198, Procedure Documentation
02114228, 2016 CDBI Identified an Enhancement to 1[2]-EOP-10 to Provide Additional Guidance in the Event the Supplying Unit’s EDG were to Fail
02114232, 2016 CDBI Identified an Enhancement to 1[2]-EOP-99 to Provide Additional Guidance to Restore Power in the Event the Supplying Unit’s EDG were to Fail
02114404, Re-evaluate MCCB Testing for the 125VDC System
02114536, SBO EDG Load Calc. Last Revision Was in 1994
02114557, U1 DOST/Fuel Oil Transfer Missile Protection
02114584, EER Ventilation Single Failure Analysis
02114709, Check Disassembly Procedure Enhancement
02114784, AC TCC Curve Shift for DC Application for Dual Volt Bkr
02114963, EDG Fuel Oil Check Valve IST Testing