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

July 22, 2005

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

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY INSPECTION REPORT 05000335/2005007 AND 05000389/2005007

Dear Mr. Stall:

On June 24, 2005, the U.S. Nuclear Regulatory Commission (NRC) completed a safety system design and performance capability team inspection at your St. Lucie Units 1 and 2. The enclosed report documents the inspection findings which were discussed on June 23, 2005, with Mr. Christopher Costanza and other members of your staff.

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

Based on the results of the inspection, no findings of significance were identified.

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

Sincerely,

/RA/

Charles R. Ogle, Chief
Engineering Branch 1
Division of Reactor Safety

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

cc w/encl: - (See page 2)

Enclosure: NRC Inspection Report 05000335/2005007 and 05000389/2005007
w/Attachment: Supplemental Information

cc w/encl:
William Jefferson, Jr.
Site Vice President
St. Lucie Nuclear Plant
Florida Power & Light Company
Electronic Mail Distribution

G. L. Johnston
Plant General Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

Terry L. Patterson
Licensing Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

David Moore, Vice President
Nuclear Operations Support
Florida Power & Light Company
Electronic Mail Distribution

Rajiv S. Kundalkar
Vice President - Nuclear Engineering
Florida Power & Light Company
Electronic Mail Distribution

M. S. Ross, Managing Attorney
Florida Power & Light Company
Electronic Mail Distribution

Marjan Mashhadi, Senior Attorney
Florida Power & Light Company
Electronic Mail Distribution

William A. Passetti
Bureau of Radiation Control
Department of Health
Electronic Mail Distribution

Craig Fugate, Director
Division of Emergency Preparedness
Department of Community Affairs
Electronic Mail Distribution

J. Kammel
Radiological Emergency
Planning Administrator
Department of Public Safety
Electronic Mail Distribution

Douglas Anderson
County Administrator
St. Lucie County
2300 Virginia Avenue
Ft. Pierce, FL 34982

Distribution w/encl:
B. Moroney, NRR
L. Slack, RII EICS
RIDSNRRDIPMLIPB
PUBLIC

X SISP REVIEW COMPLETE: Initials: _C.Ogle____ ☐ SISP REVIEW PENDING*: Initials: _____ *Non-Public until the review is complete
X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE
ADAMS: X Yes ACCESSION NUMBER:_____

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRP	RII:DRS
SIGNATURE	**RA ***	**RA ***	**RA ***	**RA ***	**RA ***	**RA ***	**RA ***
NAME	RBerryman	LMellen	CSmith	SRose	NStaples	RTaylor	J. Munday
DATE	7/19/2005	7/19/2005	7/21/2005	7/21/2005	7/20/2005	7/20/2005	7/19/2005
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: E:\Filenet\ML052030547.wpd

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-335, 50-389
License No.:	DPR-67, NPF-16
Report Nos.:	05000335/2005007, 05000389/2005007
Licensee:	Florida Power & Light Company (FPL)
Facility:	St. Lucie Nuclear Plant, Units 1 & 2
Location:	6351 South Ocean Drive Jensen Beach, FL 34957
Dates:	June 13-17, 2005 June 20-24, 2005
Inspectors:	R. Berryman, Senior Reactor Inspector (Lead Inspector) L. Mellen, Senior Reactor Inspector C. Smith, Senior Reactor Inspector S. Rose, Senior Operations Engineer N. Staples, Reactor Inspector R. Taylor, Reactor Inspector
Accompanied by:	C. Fong, Reactor Inspector (Trainee)
Approved by:	Charles R. Ogle, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2005007 and 05000389/2005007, 06/13-17/2005 and 06/20-24/2005; St. Lucie Nuclear Plant, Units 1 & 2; Safety System Design and Performance Capability Inspection.

This inspection was conducted by a team of inspectors from the NRC's Region II office. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

None.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events and Mitigating Systems

1R21 Safety System Design and Performance Capability (71111.21)

The team evaluated the capability of installed plant equipment to detect and respond to a loss of offsite power (LOOP) including a station blackout (SBO) event. Procedures which direct the mitigating actions for these events were also evaluated.

A specific list of components and documents reviewed for each section is included in the Attachment to this report.

.1 System Needs

.11 Process Medium

a. Inspection Scope

The team reviewed the water sources for components and systems required for the mitigation of the LOOP event. These included the refueling water tank (RWT) and the condensate storage tank (CST) for both Units 1 and 2. The team specifically reviewed the availability, reliability and adequacy of the water sources with respect to the anticipated water source requirements for the LOOP event. This review also included machinery history, inspection and test acceptance criteria for check valves V09151, V09157, V09119, and V09135 which are in the flowpath between the CST and auxiliary feedwater pump (AFW) pump suctions to verify these components will support the system function under accident conditions. In addition, the team reviewed design criteria information, drawings, vendor manuals, and calculations to determine the minimum water levels for pump net positive suction head (NPSH) and tank volume to verify that the design and Updated Final Safety Analysis Report (UFSAR) accident analysis assumptions were consistent with existing system and equipment capability.

b. Findings

No findings of significance were identified.

.12 Energy Sources

a. Inspection Scope

The team reviewed design documentation, drawings, calculations, technical manuals, and test documentation to verify that the capacity of the fuel oil storage tanks and the design of the fuel oil transfer pumps were adequate to provide the fuel required to operate the emergency diesel generators (EDGs) for the period of operation assumed in the accident analysis. In addition, the team reviewed the station acceptance criteria

tests results and trending for fuel oil quality to verify these were consistent with the EDG vendor recommendations and applicable industry standards. The team reviewed design documentation, drawings, and installed configuration to verify that the EDG air start system capabilities were consistent with design basis assumptions. In addition, the team reviewed plant work orders (PWO) associated with starting air storage tanks to verify that the tanks have been adequately maintained. The team reviewed design documentation, drawings, installed configuration and maintenance history to verify the steam supply valves to the turbine driven AFW pumps, MV-08-13 and MV-08-14, will be available to perform their intended design functions.

The team reviewed instrument uncertainty calculations for a selection of risk-significant degraded voltage relays which initiate logic for separation from the grid, automatic start of the EDGs, sequential loading of risk significant equipment required to mitigate a LOOP and provide alarm functions for protection of risk significant equipment from the effects of a degraded voltage condition. Based on the minimum bus voltages at the class 1E switchgear under the worst degraded grid voltage conditions, the team evaluated the degraded voltage analysis which demonstrated the adequacy of protection provided to risk significant equipment by the degraded voltage relays. The team also evaluated transient voltage protection provided by the loss of voltage relays installed in a selection of Class 1E switchgear for risk significant equipment. Additionally, the team reviewed and evaluated completed calibration procedures of these relays which were performed in accordance with the requirements of Technical Specifications (TS) 4.3.2.1.1.

Reviews of the undervoltage relay uncertainty calculations were performed in order to verify that the undervoltage relays were sufficiently accurate to comply with the trip values and allowed values delineated in TS Table 3.3-4, Functional Unit 6, Loss of Voltage. Additionally, reviews of completed undervoltage relay calibration procedures were performed in order to verify that the instruments were performing in accordance with the accuracies established in the uncertainty analyses, and that the Class 1E electrical distribution system was meeting the requirements of the plants' licensing and design bases.

The team also reviewed the loading and power supplies of equipment in the technical support center (TSC) to verify that the TSC could conduct required functions during a LOOP.

b. Findings

No findings of significance were identified.

.13 Controls

a. Inspection Scope

The team reviewed the pump start logic for the 1A and 1C AFW pumps and 1A high pressure safety injection (HPSI) pump to verify that the pumps would be functional and provide desired control during accident/event conditions. The team reviewed the EDG load sequencer logic to verify that the permissives and starting circuits for EDGs and EDG load sequencers were appropriate for degraded or loss of voltage conditions on the 4160 volts alternating current (VAC) safety-related buses. The team also reviewed control wiring diagrams (CWDs) depicting the logic initiated by the loss of voltage relays to separate the 4160 VAC safety-related buses from offsite power sources.

The team reviewed logic and control diagrams for automatic makeup to EDG day tanks to verify that the fuel supplies to the EDGs would be maintained automatically. The team also reviewed the instrument functional, logic, and elementary drawings for a selection of risk significant motor operated valve (MOV) motors to verify that the valves could perform their critical functions during a design basis event.

b. Findings

No findings of significance were identified.

.14 Operator Actions

a. Inspection Scope

The team reviewed plant operating procedures, including emergency operating procedures (EOPs), abnormal operating procedures, alarm response procedures, and normal operating procedures that would be used in the identification and mitigation of a LOOP. The team focused on installed equipment and operator actions that could be used to mitigate LOOPs. The review was done to verify that the procedures were consistent with the UFSAR description of a LOOP and with the Combustion Engineering emergency procedure guidelines (CENs), any step deviations were justified and reasonable, and the procedures were written clearly. The team reviewed job performance measures, simulator exercise guides and training lesson plans pertaining to identification and mitigation of LOOPs to confirm that training was consistent with the applicable operating procedures.

In addition, the team reviewed simulation of various LOOP scenarios on the plant simulator and walked down portions of applicable procedures to verify that operator training, procedure guidance, and instrumentation were adequate to identify a LOOP and implement post-LOOP mitigation strategies. The manual operator action times for performance of LOOP mitigation activities were reviewed to verify consistency with accident analyses, CENs, and operator training.

b. Findings

No findings of significance were identified.

.15 Heat Removal

a. Inspection Scope

The team reviewed design documentation, drawings, calculations and test records to verify that EDG cooling systems were capable of removing the heat load and maintaining the EDGs within design requirements at maximum ambient temperatures during EDG standby conditions and during design basis operating conditions. The team also reviewed design documentation and calculations to verify that the AFW pumps received adequate cooling and would not exceed design temperature limitations during design basis loading at maximum assumed ambient temperature based upon their configuration. Additionally, the team walked down portions of the ventilation system supplying the battery rooms and reviewed logs to verify that air flow was steady and unobstructed and that battery room ambient temperatures were not excessive.

The team reviewed drawings and calculations to verify that the reactor auxiliary building (RAB), electrical equipment room, EDG building room, and safeguards pump room ventilation systems were adequately sized for heat removal under accident conditions. Additionally, the team reviewed drawings and calculations to verify that the control room air conditioning system (CRACS) was capable of maintaining the air temperature within the limits specified by the UFSAR.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

.21 Installed Configuration

a. Inspection Scope

The team performed field inspections of the EDGs and selected portions of the Class 1E electrical switchgear that are required to perform their design function to mitigate a LOOP. A field inspection of the 125 VDC Class 1E train “A” and “B” batteries and associated chargers and distribution panels was also performed. Additionally, inspections were performed of the AFW pump motors and selected AFW MOVs.

The field inspections were performed to verify that the material conditions of the installed equipment was acceptable as demonstrated by the absence of unusual odors; damaged insulation as shown by discoloration and/or embrittlement; electric arc damage; fluctuating changes in motor drive currents; broken or missing lights/lenses; and missing ground straps or poor ground connections. Additionally, during the walk down, the team verified the as built configuration of the Class 1E electrical distribution

system against approved design output drawings and protective relays setting calculations.

The team also performed field walkdowns of selected portions of systems which identify and mitigate LOOPs to observe the present condition and configuration. The team walked down portions of the AFW systems on Units 1 and 2 as well as portions of the CST suction sources on Units 1 and 2 to verify that they were aligned so that they would be available for operators to mitigate a design basis accident (DBA). The team walked down portions of the emergency diesel generators to verify that fuel supplies were aligned properly and cooling systems were aligned and available. The team walked down portions of the HPSI and shutdown cooling system (SDC) as well as portions of the RWT suction source to verify that they were aligned so that they would be available to the operators to mitigate a DBA. The team compared valve positions with those specified in the system operating procedure line-ups and drawings, and observed the material condition of the plant to verify it would be adequate to support operator actions. The team reviewed maintenance records to verify that the steam supply to the 1C turbine-driven auxiliary feedwater pump was not obstructed.

The team also performed a field inspection of the diesel fuel oil tank level instruments to verify that the instruments were installed in accordance with the instrument installation drawing. Additionally, the team observed the material conditions of the field mounted instruments to verify that they were acceptable, freeze protection was provided where necessary, and that redundant instrument sensing lines were routed and protected to prevent common cause failure of the instruments.

b. Findings

No findings of significance were identified.

.22 Operation

a. Inspection Scope

The team reviewed selected portions of procedures used to mitigate LOOPs to verify the licensee had included appropriate human factors considerations in the procedures and in the plant. This review included verification of labeling, lighting, noise, communications, and accessibility. The team also checked system alignments, conducted field walkdowns and observed surveillance tests of selected components specified in the LOOP EOP for which local operation or main control room operation was required. These reviews were conducted to verify consistency with design and licensing basis assumptions, and the TS.

b. Findings

No findings of significance were identified.

.23 Design

a. Inspection Scope

.1 Mechanical Design Review

The team reviewed mechanical design calculations, specifications, and system design basis documentation to identify design criteria which defined the required capacity and capability of LOOP mitigation mechanical equipment. Surveillance test procedures and equipment monitoring activities were also reviewed to verify the design criteria were appropriately translated into acceptance criteria. The team reviewed NPSH calculations for the AFW, HPSI, and SDC pumps to verify that adequate NPSH was available from each of the applicable water sources. Design changes were reviewed to verify that system and equipment design functions were appropriately evaluated and maintained. The team also reviewed design calculations to verify adequate minimum flow and pump run-out protection for the AFW, HPSI, and SDC pumps.

The team also reviewed the component cooling water (CCW) and SDC heat exchangers to verify that the heat exchangers would provide the nessesary heat transfer to support the SDC system under accident conditions. This review included the maintenance procedures associated with the inspection of the CCW heat exchangers to verify that conditions inside of the heat exchangers are maintained such that the heat transfer requirements may be met.

The team reviewed head curves and calculations that assessed the NPSH available to the SDC pumps to verify the capability of the system to meet the minimum specified flow and head requirements during DBA conditions. The review included a verification that adequate NPSH would be available at the predicted sump temperature during recirculation, if required to mitigate a LOOP.

.2 Instrumentation and Controls

The team reviewed and evaluated condition report (CR) 00-1069 which described actions completed by the licensee in response to Information Notice (IN) 2000-06. The scope of the review included actions completed by the licensee for the establishment of interfaces between FPL Power Supply and Transmission Station Operations and the St. Lucie plant to ensure that the plant is informed by the load dispatcher or system operators of emerging conditions that could affect offsite power reliability. The team also reviewed and evaluated actions required by the interface agreement to inform the plant of forecasted conditions that may result in the grid exceeding voltage limits. The reviews were performed to verify that the concerns addressed in NRC IN 2000-06 were reviewed by the licensee and appropriate responses were developed and implemented. Additionally, the review was performed to verify that plant activities such as maintenance which could impact the capability of the plants to respond to the emerging conditions would be controlled.

The team also reviewed the design basis documents; TS; functional, logic, and elementary drawings; and surveillance data associated with the control circuits for HPSI

Pump 1A, AFW Pumps 1A/1C, and selected MOVs for the AFW system. The team also reviewed control circuits for MOV actuation and control for the auxiliary feedwater actuation signal (AFAS). These reviews were conducted to verify that equipment performance was appropriately monitored and maintained consistent with the design and licensing basis and to confi.rm that the control circuits implemented the functional requirements stated in the design and licensing basis.

b. Findings

No findings of significance were identified.

.24 Testing and Inspection

a. Inspection Scope

The team reviewed surveillance testing and inspection documentation for the EDGs to verify performance monitoring was adequate to assure that design capability was maintained and equipment degradation would be identified. The team also reviewed the surveillance test procedures which control testing of the 1C AFW pump to verify testing requirements specified in the procedures were adequate. Additionally, completed test and inspection results were reviewed to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of the 1C AFW pump. The team reviewed MOV test results for AFW injection MOVs to verify test results satisfied the criteria for MOV testing. Test and inspection results were reviewed to verify that the results were consistent with design specifications, that test acceptance criteria and test results appropriately considered differences between testing conditions and design requirements during accident conditions, and that test and inspection results met established acceptance criteria.

The team reviewed and evaluated surveilance test results for the periodic test of train "A" engineered safety features and 1A/1B EDGs. The team also reviewed and evaluated test results of the 1A battery capacity test. The reviews were performed to verify that the requirements of the plants licensing and design bases were being met as demonstrated by the test results.

The team reviewed surveillance procedures of Unit 1 process instrument channels LT-9013A, SG narrow range level, PT-8013A SG pressure, and FT-09-2A AFW pump flow to verify that the prescribed tests were consistent with the instrument design including uncertainty calculations, setpoint documents, and TS. The team verified that the calculations included appropriate uncertainties for normal and accident parameters. The team also reviewed procedures and records of completed surveillance tests, performance tests, inspections, and walked down selected components of the AFW and main steam systems to verify that the tests and inspections appropriately verified that licensing and design bases assumptions were being maintained. The team reviewed the design for EDG Fuel Oil Transfer Pump 1A and to verify that testing performed validated integrated system operation for event conditions. The team also reviewed control circuit test results for valve MV-09-9 and valve MV-09-10 to verify that components were adequately tested to verify component operability.

b. Findings

No findings of significance were identified.

.3 Selected Components

.31 Component Degradation

a. Inspection Scope

The team reviewed inservice test program trending data, maintenance and testing documentation, calibration records, work orders, and condition reports to assess the licensee's actions to verify and maintain the safety function, reliability and availability of selected components. Additionally, the team reviewed potential common cause failure mechanisms due to flooding, maintenance, parts replacement, and modifications.

b. Findings

No findings of significance were identified.

.32 Equipment/Environmental Qualifications

a. Inspection Scope

The team reviewed the environmental requirements for the AFW pumps and EDG rooms to verify that the equipment is suitable for the environment under postulated accident conditions. This review included verification of adequate space or room cooling by means of outdoor ambient air. The team also reviewed AFW lubricating oil and governor oil systems to verify adequate temperature protection at low temperatures.

b. Findings

No findings of significance were identified.

.33 Equipment Protection

a. Inspection Scope

The team performed field walkdowns of the AFW pump rooms and EDG rooms to verify that the rooms were able to withstand an external flood up to the design basis flood level and to evaluate susceptibility to internal flooding. The team also evaluated both Unit 1 and 2 AFW piping and pump susceptibility to freezing and evaluated freeze protection. The team also performed field walkdowns of the CSTs to verify that installed missile protection was intact and installed in accordance with the original design configuration.

b. Findings

No findings of significance were identified.

.34 Component Inputs/Outputs

c. Inspection Scope

The team reviewed and evaluated calculations performed for determining the required brake horsepower (BHP) of the 1A and 1B AFW pump motors based on the mechanical load demand. The team also reviewed and evaluated the EDG loading calculations to verify that the BHP rating of the AFW pump motors had been correctly incorporated in the EDG loading analysis. Th-e team inspected the capability of 1A and 1B AFW pumps and critical AFW MOVs to perform their design functions under degraded voltage conditions. The capability of the AFW pumps to perform under degraded voltage conditons was inspected by reviewing the voltage drop calculations that were completed for the motors. The capability of the selected AFW MOVs to perform under degraded voltage conditions was inspected by review and evaluation of the voltage drop calculations that were completed for both 125 VDC and 120 VAC MOV motor operators. This review was conducted to verify that there was sufficient voltage margin for starting the AFW pump motors and that adequate starting torque was developed by the AFW MOVs under these starting conditions.

The team also reviewed the instrumentation used by operators for mitigation of a LOOP event. The team reviewed appropriate design basis documents, TS, system flow diagrams, instrument uncertainty calculations, instrument setpoint calculations, instrument scaling documents, calibration procedures, and calibration test records to verify that the instruments provided adequate range and accuracy to perform their safety function. The setpoints for the alarms and equipment actuation relays were reviewed to verify that they were established in accordance with setpoint guideline procedures and design output documents. The last two completed calibration test records were reviewed to confirm that instrument setpoints were consistent with setpoint calculations.

b. Findings

No findings of significance were identified.

.35 Operating Experience

a. Inspection Scope

The team reviewed a sample of extent of condition reviews and corrective actions for industry and station operating experience issues related to LOOPs, surveillance tests, loss of grid, auxiliary feedwater and check valve problems to verify that plant specific issues were appropriately identified and addressed. The team also verified the lessons learned from the 2004 hurricanes and LOOP event were incorporated into operator training.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The team assessed the scope of the licensee's extent-of-condition reviews and the adequacy of the corrective actions. The team reviewed calibration test records to verify that "out of tolerance" conditions were properly entered into the corrective action program for evaluation and disposition. Additionally, the team reviewed a sample of corrective maintenance work orders on selected pumps and valves. The team reviewed selected system health reports, maintenance records, surveillance test records, and CRs to verify that design and performance problems were identified and entered into the corrective action program.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings, Including Exit

The lead inspector presented the inspection results on June 23, 2005, to Mr. Costanza and other members of the licensee staff. The licensee acknowledged the findings presented. Proprietary information is not included in this inspection report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

K. Frehafer, Licensing
E. Sumner, Shift Manager
J. Cimino, Configuration Control Analyst
R. Filipek, Design Engineering Configuration Management Supervisor
V. Rubano, Project Engineer
M. Rubano, Systems Engineer
J. Giampietro, Design Engineering Civil Supervisor
R. Hughes, Site Engineering Manager
T. Patterson, Licensing Manager

NRC (attended exit meeting)

C. Ogle, Chief, Engineering Branch One, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None.

LIST OF COMPONENTS AND DOCUMENTS REVIEWED

Components:

1R21.11a Process Medium
CST
RWT

Valves:
Check Valves V09151, V09157, V09119, and V09135

1R21.12a Energy Sources
Fuel Oil Storage Tanks (1A1/1A2/1B1/1B2)
EDG Starting Air Storage Tanks

Pumps:
EDG Fuels Transfer Pumps (1A/1B)

Valves:
MV-08-13 SG Supply to AFW MOV
MV-08-14 SG Supply to AFW MOV

Degraded Voltage Relays:
Class 1E 4160 VAC Bus 1A3 Relay 27-5
Class 1E 4160 VAC Bus 1B3 Relay 27-6
Class 1E 480 VAC Bus 1A2 Relay 27-1
Class 1E 480 VAC Bus 1B2 Relay 27-4

Loss of Voltage Relays:
Class 1E 4160 VAC Bus 1A3 Relay 27-1
Class 1E 4160 VAC Bus 1B3 Relay 27-4

1R21.13a Instrumentation & Controls
Diesel Oil Day Tank 1A1

Valves:
AFW 1C Header Discharge to SG 1A Valve MV-09-11
AFW 1C Header Discharge to SG 1B Valve MV-09-12
AFW 1A Header Discharge to SG 1A Valve MV-09-9
AFW 1B Header Discharge to SG 1B Valve MV-09-10
AFW A to B Header Cross-Tie Valve MV-09-13
AFW A to B Header Cross-Tie Valve MV-09-14

Pump Motors:
AFW Pump 1A and 1C,
HPSI Pump 1A

Level Instruments:

LI 59-001A; LS 59-001A

1R21.15.a Heat Removal
EDG Radiators

Batteries:
1A and 1B

1R21.21a Installed Configuration
RWT
CST

Pumps:
Auxiliary Feedwater Pumps: 1A, 1B, 1C, 2A, 2B, 2C
High Pressure Safety Injection Pumps 1A, 1B, 2A, 2B
Shutdown Cooling Pumps 1A, 1B, 2A, 2B

Valves:
DHV-37, 38, DH Suction Side
DHV-17, 28, DH Discharge Side
MUV-60, -72, Make-up Suction Side
MUV-36, 43, Make-up Discharge Side
DHV-33, 36, DH Suction Side
DHV-58, DHV-73, DHV-5, DHV-6, DHV-3, DHV-34, DHV-35, DHV-42, DHV-43, DHV-11, DHV-12, MUV-24, MUV-25, MUV-26, MUV-27

4160 VAC Switchgear:
1AB
1A3
1B3

480 VAC Switchgear
1A2
1B2

Inverters:
1A
1B
1C
1D

Batteries:
1A
1B

Battery Chargers:
1A
1AA
1B
1BB
1AB

DC Distribution Panels:
1A
1B
1AB
1AB-1

1R21.22a Operation
Unit 1 Condensate Storage Tank
Unit 2 Condensate Storage Tank

Pumps:
Auxiliary Feedwater Pumps: 1A, 1B, 1C, 2A, 2B, 2C

Valves:
Valve V08163 - 1B S/G Steam to 1C AFW Pump Check Valve
Valve MV-08-3 - 1C AFW Pump Throttle/Trip

Emergency Diesel Generators:
1A, 1B, 2A, 2B

1R21.23a Design
Unit Auxiliary Transformers 1A and 1B
Main Transformer Bank 1
Generator No. 1 Isophase Bus Shunts (3RL6)

Pumps:
AFW Pumps 1A, 1B and 1C
HPSI Pumps 1A and 1B
SDC Pumps 1A and 1B
CS Pumps 1A and 1B

Heat Exchangers:
SDC Heat Exchangers 1A and 1B
CCW Heat Exchangers 1A and 1B)

Valves:
AFW 1C Header Discharge to SG 1A Valve MV-09-11
AFW 1C Header Discharge to SG 1B Valve MV-09-12

AFW 1A Header Discharge to SG 1A Valve MV-09-9
AFW 1B Header Discharge to SG 1B Valve MV-09-10
AFW A to B Header Cross-Tie Valve MV-09-13
AFW A to B Header Cross-Tie Valve MV-09-14

1R21.24a Testing and Inspection
EDGs 1A and 1B

Batteries:
1A

Pumps:
Unit 1 Fuel Oil Transfer Pump 1A1
Auxiliary Feedwater Pumps: 1A and 1B

Valves:
AFW 1C Header Discharge to SG 1A Valve MV-09-11
AFW 1C Header Discharge to SG 1B Valve MV-09-12
AFW 1A Header Discharge to SG 1A Valve MV-09-9
AFW 1B Header Discharge to SG 1B Valve MV-09-10
AFW A to B Header Cross-Tie Valve MV-09-13
AFW A to B Header Cross-Tie Valve MV-09-14

4160 VAC Switchgear:
1A3, 1B3, 1AB

Instrumentation:
LI-12-11, LI-12-12, PI-08-05, PI-09-8, FI-09-2A

Level Transmitters:
LT-12-11, LI-12-12

Pressure Transmitters:
PT-08-5, PT-09-8A

Flow Transmitters:
FT-09-2A

1R21.31a Component Degradation

Pumps:
AFW Pumps 1A and 1C

Valves:
MV-09-9, MV-09-10

4160 VAC Switchgear:
1A3, 1B3 and 1AB

1R21.32a Equipment/Environmental Qualification
Unit 1 CST, Unit 2 CST

Pumps:
AFW Pumps 1A, 1B, 1C, 2A, 2B and 2C

Level Transmitters:
LT 9013A

1R21.34a Component Inputs/Outputs

4.16 KV Bus Station Blackout Tie Breaker (4.16 KV SWGR. 2AB-1)

Pumps:
Auxiliary Feedwater Pumps: 1A, 1B

Valves:
AFW 1C Header Discharge to SG 1A Valve MV-09-11
AFW 1C Header Discharge to SG 1B Valve MV-09-12
AFW 1A Header Discharge to SG 1A Valve MV-09-9
AFW 1B Header Discharge to SG 1B Valve MV-09-10

Transmitters:
LT 9013A, Steam Generator 1A Level
PT 8013A, Steam Generator 1A Pressure
PT-09-8A, AFW Discharge Header Pressure
PT-08-5, 1C AFW Pump Steam Inlet Pressure

Valves:
MV-09-9, MV-09-10, MV-09-11, and MV-09-12

Documents:

Calculations
PSL-1EJM-27-016, RAB Ventilation, Accident Conditions, Rev. 0
PSL-1EJM-72-007, NPSH Calculation for AFW Pumps, Rev. 0
PSL-1EJM-72-025, CST AFW Pump Nozzle Location, Rev. 0
PSL-1EJM-70-029, Location of AFW Pumps - Study, Rev. 0
PSL-1-FJE-90-002, GL 89-10 MOV Cable Voltage Drop, St. Lucie Unit 1, Rev. 9
PSL-1-FJE-90-0013, St. Lucie Unit 1 Emergency Diesel Generator 1A and 1B Electrical Loads, Rev. 3
PSL-1-FJE-90-0015, Safety Related Batteries 1A and 1B, Rev. 4
PSL-1-FJE-90-0026, St. Lucie- Unit1 Short Circuit, Voltage Drop and PSB-1 Analysis, Rev. 5

PSL-1-FJE-92-010, St. Lucie Unit 1 PSB-1 and Loss of Voltage Undervoltage Relay Setpoints, Rev. 2
PSL-1-FJE-93-027, Mechanical Input to the EDG 1A and 1B Electrical Load Calculation , Rev. 1
PSL-1-FJE-94-002, GL 89-10 125 VDC Motor Operated Valve Cable Voltage Drop, St. Lucie unit 1, Rev. 2
PSL-1FJI-92-007, St. Lucie Unit 1 Condensate Storage Tank Level Transmitter Calibration Span and Setpoint Determination, Rev. 0
PSL-1FJI-93-002, U1 RPS/AFAS SG Downcomer LT Uncertainty Determination, Rev. 3
PSL-1FJI-93-003, U1 RPS/AFAS SG Pressure Uncertainty Determination, Rev. 3
PSL-1FJI-93-013, U1 SG LT Span Calibration and WR Instrument Uncertainty, Rev. 6
PSL-1FJM-90-028, RAB Electrical Equipment Room Ventilation System, Rev. 1
PSL-1-FJM-90-040, EDG Building Room Temperature for Operating Conditions, Rev. 1
PSL-1FSM-97-025, AFW System NPSH Review Using Unit 1CST Supply, Rev. 1
PSL-1FSM-97-032, Condensate Storage Tank Volume Requirements, Rev. 1
PSL-1FSM-98-001, NPSH of CS, HPSI and LPSI Pumps from Containment Sump, Rev. 1
PSL-BFJI-94-002, SG High Level Turbine Trip Setpoint Review, Rev. 1
PSL-2E-M-80-033, Heat Load and Air Requirement During Emergency Condition, Rev. 1

Drawings
FD-1, Type 1 Fire Damper Sleeve Details (Seismic and Non-Seismic), Rev. 3
2998-G-272A, Combined Main and Auxiliary One Line Diagram, Rev. 7.
5614-M-3062, Safety Injection System, Rev. 26
8770-B-326, Sheet 237, HPSI 1A Pump Control & Wiring Diagram, Rev. 10,
8770-B-326, Sheet 629, AFWP 1A Pump Schematic Diagram, Rev. 8
8770-B-326, Sheet 631, AFWP 1C Turbine & Steam Vlv MV-08-03 Schematic Diagram, Rev. 13
8770-B-326, Sheet 957, Schematic Diagram, Diesel Generator 1A Start Circuits, Rev. 8
8770-B-326, Sheet 959, Schematic Diagram, Diesel Generator 1A Start Solenoid Circuits, Rev. 16
8770-B-327, Sheet 237, HPSI 1A Pump Control & Wiring Diagram, Rev. 19
8770-B-327, Sheet 251, Control Wiring Diagram, Low Pressure Safety Injection Pump 1A, Rev. 19
8770-B-327, Sheet 376, Steam Generator 1A Level, Rev. 16
8770-B-327, Sheet 378, Steam Generator 1A Level, Rev. 14
8770-B-327, Sheet 601, Aux. FW HDR A&B Flow and Pressure, Rev. 16
8770-B-327, Sheet 602, Aux. FW HDR C Flow and Pressure & FWP 1A&1B Flow, Rev. 21
8770-B-327, Sheet 608, AFWP 1A Discharge to SG 1A MV-09-09 Control & Wiring Diagram, Rev. 13
8770-B-327, Sheet 609, AFWP 1B Discharge to SG 1B MV-09-10 Control & Wiring Diagram, Rev. 12
8770-B-327, Sheet 610, AFWP 1A Discharge to SG 1B MV-09-13 Control & Wiring Diagram, Rev. 13
8770-B-327, Sheet 611, AFWP 1B Discharge to SG 1A MV-09-14 Control & Wiring Diagram, Rev. 10
8770-B-327, Sheet 612, AFWP 1C Discharge to SG 1A MV-09-11 Control & Wiring Diagram, Rev. 16

8770-B-327, Sheet 613, AFWP 1C Discharge to SG 1B MV-09-12 Control & Wiring Diagram, Rev. 12
8770-B-327, Sheet 629, AFWP 1A Control & Wiring Diagram, Rev. 27
8770-B-327, Sheet 631, AFWP 1C-Turbine Control & Wiring Diagram, Rev. 27
8770-B-327, Sheet 632, AFWP 1C Steam Vlv to SG 1B MV-08-03 Control & Wiring Diagram, Rev. 17
8770-B-327, Sheet 638, AFWP 1C Turbine Governor & Control Panel Control & Wiring Diagram, Rev. 8
8770-B-327, Sheet 652, SG 1A to AFWP-1C MV-08-13 Control & Wiring Diagram, Rev. 13
8770-B-327, Sheet 653, SG 1B to AFWP-1C MV-08-14 Control & Wiring Diagram, Rev. 11
8770-B-327, Sheet 744, Condensate Storage Tank Control & Wiring Diagram, Rev. 9
8770-B-327, Sheet 949, Control Wiring Diagram, 4160 V Switchgear 1A3 Load Shedding Relays, Rev. 14
8770-B-327, Sheet 953, Control Wiring Diagram, Diesel Generator 1A Breaker, Rev. 20
8770-B-327, Sheet 963, Control Wiring Diagram, Diesel Generator 1B Breaker, Rev. 21
8770-B-327, Sheet 990, Control Wiring Diagram, 480 V SWGR. 1A2 MET., REL., and HTRS., Rev. 20
8770-B-327, Sheet 1126, EDG Fuel Oil Transfer Pump 1A Control & Wiring Diagram, Rev. 12
8770-B-327, Sheet 1244, Switch Developments Control & Wiring Diagram, Rev. 2
8770-B-327, Sheet 1269, AFW Actuation System Control Cabinet Mash.1 Control & Wiring Diagram, Rev. 13
8770-B-327, Sheet 1270, AFW Actuation System Control Cabinet Mash.2 Control & Wiring Diagram, Rev. 0
8770-G-332, Sheet 1, 480V Miscellaneous, 125 VDC and Vital AC One Line Diagram, Rev. 23.
8770-G-332, Sheet 2, 480V Miscellaneous, 125 VDC and Vital AC One Line diagram, Rev. 6.
8770-B-400, Sheet 116, Lighting Panel Details, Rev. 15
8770-B-400, Sheet 126, Lighting Panel Details, Rev. 17
8770-G-078, Flow Diagram Safety Injection System, Rev. 28
8770-G-079, Flow Diagram Main Steam System, Rev. 49
8770-G-080, Flow Diagram Condensate System, Rev. 60
8770-G-080, Unit 1 Flow Diagram, FW and Condensate, Sheet 3, Rev. 48
8770-G-080, Unit 1 Flow Diagram, FW and Condensate, Sheet 4, Rev. 37
8770-G-088, Flow Diagram Containment Spray and Refueling Water Systems, Rev. 46
8770-G-096, Flow Diagram Emergency Diesel Generator System Air Start Package 1A, Rev 16
8770-G-096, Flow Diagram Emergency Diesel Generator System Air Start Package 1B, Rev 13
8770-G-096, Flow Diagram Emergency Diesel Generator System Diesel Engine 1A1, Rev. 17
8770-G-096, Flow Diagram Emergency Diesel Generator System Diesel Engine 1A2, Rev. 16
8770-G-096, Flow Diagram Emergency Diesel Generator System Diesel Engine 1B1, Rev 15
8770-G-096, Sheet 1A, EDG System Diesel Engine 1A1 Flow Diagram, Rev. 17
8770-G-096, Sheet 1B, EDG System Diesel Engine 1A2 Flow Diagram, Rev. 17
8770-G-274, Auxiliary One Line Diagram, Rev. 2
8770-G-398, Control Room Lighting, Rev. 16
8770-G-424 SO5, Fire Protection Reactor Auxiliary Building Elevation 62.00' Fire Detectors and Emergency Lights, Rev. 6
8770-4544R, Refueling Water Tank General Plan, Rev. 3
8770-4770, Details for Condensate Storage & Diesel Oil Storage Tank, Rev. 6

Procedures
0702835, Loss of Offsite Power/Loss of Forced Circulation Lesson Plan, Rev. 7
0711404, Reactor Protective System, Rev. 12
0711412, Auxiliary Feedwater System (AFW) and Auxiliary Feedwater Actuation System (AFAS), Training Material, Rev. 19
0-IMP-09.01, AFW Turbine Governor Oil Change and Tuning Instruction, Rev. 0
0-MMP-90.22, Swing Check Valve Inspections, Rev. 3A
1-0030136, Loss of a Safety Related D.C. Bus, Rev. 14B
1-0350020, Fuel Pool Cooling and Purification System - Normal Operation, Rev. 43
1-0400050, Periodic Test of the Engineered Safety Features, Rev. 69
1-0410050, HPSI / LPSI Periodic Test, Rev. 79
1-0410050, HPSI / LPSI Periodic Test, Rev. 75
1-0700022, Auxiliary Feedwater - Normal Operation, Rev. 45A
1-0700028, Auxiliary Feedwater Turbine Mechanical and Electrical Overspeed Trip Tests, Rev. 15A
1-0700031, Auxiliary Feedwater, Rev. 23
1-0700050, Auxiliary Feedwater Periodic Test, Rev. 84
1-0700051, AFAS Actuation Monthly Functional Test, Rev. 32
1-0700052, AFAS Actuation Relay Test, Rev. 14
1-0910030, Start-up Transformer, Rev. 12
1-0910031, Main Transformer Off-Normal, Rev. 16
1-0910032, Auxiliary Transformer, Rev. 1A
1-0910054, Loss of a Safety Related A.C. Bus, Rev. 19A
1-1400064F, Installed Plant Instrumentation Calibration (flow), Rev. 54
1-2200050A, 1A EDG Periodic Test and General Operating Instructions, Rev. 78
1-ARP-01-A00, Annunciator Response Procedure for Control Room Panel A RTGB 101, Rev. 9
1-ARP-01-B00, Annunciator Response Procedure for Control Room Panel B RTGB 101, Rev. 8
1-ARP-01-C00, Annunciator Response Procedure for Control Room Panel C RTGB 101, Rev. 5
1-EMP-53.01, Backfeed Through Main Transformers, Rev. 1A
2-EMP-53.01, Backfeed Through Main Transformers, Rev. 1B
1-EOP-01, Standard Post Trip Actions (SPTA), Rev. 20
1-EOP-09, Loss of Offsite Power/Loss of Forced Circulation (LOOP/LOFC), Rev. 19
1-EOP-10, Station Blackout (SBO), Rev. 16
1-EOP-15, Functional Recovery (FR), Rev. 25
1-EOP-99, Appendices, Figures, Tables, Data Sheets, Rev. 35
1-IMP-08.05A, Steam Generator Pressure Channel Calibrations Ch. A, Rev. 3
1-IMP-08.05T, Steam Generator Pressure Transmitter Calibration, Rev. 2
1-IMP-09.15A, Steam Generator Narrow Range Level Channel Calibrations Ch. A, Rev. 2
1-IMP-09.15T, Steam Generator Narrow Range Level Transmitter Calibrations, Rev. 1E
1-M-0018, Mechanical Maintenance Safety-Related Preventive Maintenance Program, Rev. 81A
1-M-0109, 1C Auxiliary Feedwater Pump Terry Turbine Disassembly, Inspection, and Reassembly, Rev. 17
1-MMP-09.04, Auxiliary Feedwater Pump Overspeed Trip Tests Using Compressed Air, Rev. 8
1-MSP-08.07, Main Steam Safety Valve Setpoint Rev. 2E

1-NOP-03.12, Filling ECCS Supply Piping, Rev. 6
1-NOP-09.11, Auxiliary Feedwater System Initial Alignment, Rev. 3
1-NOP-53.04, Startup Transformer, Rev. 0
1-NOP-53.05, Auxiliary Transformer, Rev. 0
1-NOP-53.06, Main Transformer, Rev. 0
1-ONP-53.01, Main Generator, Section 6.10, Degraded Switchyard Condition, Rev. 9A
1-OSP-09.13, Steam Supply to AFW Pump Turbine Check Valve Close Test, Rev. 0D
1-OSP-100.10, Schedule of Periodic Tests, Checks, and Calibrations Week 10, Rev. 26B
2-0030136, Loss of a Safety Related D.C. Bus, Rev. 16A
2-0350020, Fuel Pool Cooling and Purification System - Normal Operation, Rev. 40
2-0410050, HPSI / LPSI Periodic Test, Rev. 57
2-0700022, Auxiliary Feedwater Normal Operation, Rev. 51
2-0700028, Auxiliary Feedwater Turbine Mechanical and Electrical Trip Tests, Rev. 14C
2-0910030, Start-up Transformer, Rev. 11
2-0910031, Main Transformer Off-Normal, Rev. 12B
2-0910032, Auxiliary Transformer, Rev. 1
2-0910054, Loss of a Safety Related A.C. Bus, Rev. 21A
2-ADM-03.01, Unit 2 Power Distribution Breaker List, Rev. 10
2-EOP-01, Standard Post Trip Actions (SPTA), Rev. 23
2-EOP-09, Loss of Offsite Power/Loss of Forced Circulation (LOOP/LOFC), Rev. 14
2-EOP-10, Station Blackout (SBO), Rev. 15
2-EOP-15, Functional Recovery (FR), Rev. 27
2-EOP-99, Appendices, Figures, Tables, Data Sheets, Rev. 29
2-MMP-09.04, Auxiliary Feedwater Pump 2C Overspeed Trip Tests Using Compressed Air, Rev. 5
2-ONP-09.02, Auxiliary Feedwater, Rev. 4
2-ONP-53.01, Main Generator, Rev. 9
2-NOP-53.04, Startup Transformer, Rev. 0
2-NOP-53.05, Auxiliary Transformer, Rev. 0
2-NOP-53.06, Main Transformer, Rev. 0
2-ONP-09.02, Auxiliary Feedwater Off-Normal Procedure, Rev. 4
2-NOP-03.12, Filling ECCS Supply Piping, Rev. 6
ADM-04.03, Cold Weather Preparations, Rev. 14
ADM-08.02, Conduct of Maintenance, Rev. 45A
ADM-16.01, PSL Switchyard Access / Work Control, Rev. 2
ADM-17.10, Processing Engineering Evaluations, Rev. 2C
ADM-29.01, IST Testing Program for Pumps and Valves, Rev. 12
CEN-152, Emergency Procedure Guidelines, Rev. 3
ENG-QI 1.2, Minor Engineering Package, Rev. 15
ENG QI-1.8, Design/Operability Reference Guide, Rev. 10
ENG-QI 2.0, Engineering Evaluations, Rev. 11
ENG-QI 2.1, 10CFR50.59 Applicabilit/Screening/Evaluation, Rev. 7
ENG-QI 2.3, Operability Determations, Rev. 7
ENG-QI 3.3, Vendor Technical Manual Control, Rev. 8
MMP-14.01, Component Cooling Water Heat Exchanger Cleaning and Repair, Rev. 22
ONP-100.01, Earthquake, Rev. 3

OP-1-0010125A, Check Valves Cycled During Cooldown, Cold and Heatup Conditions, Rev. 91
OP-1-0010125A, Data Sheet 38, Functional Test of Degraded Grid Voltage, Rev. 90
QI-3-PSL-1, Design Control, Rev. 14A
UFSAR Section 10.5, Auxiliary Feedwater, Amendment 20
UFSAR Section 15.2.9, Loss of Offsite Power to the Station Auxiliaries, Amendment 12

CRs
99-1838, 4 MSIVs Failed Low When Set Pressure Tested
00-1069, NRC IN 2000-06; Offsite Power Voltage Inadequacies
00-1867, Air in the HPSI, LPSI, and Containment Spray System
02-1485, AFW Pump Discharge Pressure Indication PI-09-8B
02-2661, Breaker for 1B EDG Failed to Close With LOOP and ESFAS Signals
03-0901, 1C AFW Pump Failed to Achieve Rated Speed
03-1023, After Receipt of Valid AFAS-1 and AFAS-2 Signals the 2C AFW Pump Tripped
03-4548, Overspeed Trip of AFW Pump 2C
04-3120, Received Unexpected EDG Start Failure Alarm
2004-9001-CR, Following Shutdown of both Units for Hurricane Jeanne, the station experienced a Loss of Offsite Power (LOOP)
2004-9159-CR, AFW Pump 1C Turbine Lube Oil Out of Specification for Foaming
2004-10266-CR, MV-09-9 Failed to Close
2004-10314-CR, Some TSC Equipment Lost Power During Hurricane Jeanne
2005-14777-CR, 1A EDG auto start and 1A# 4160V Bus Load Shed

Work Orders
04-0011, Calibrate Degraded Grid Relays for 1A3 4160 V Bus and 1A2 480 V Bus, 3/19/04
04-0010, Calibrate Degraded Grid Relays for 1B3 4160 V Bus and 1B2 480 V Bus, 3/19/04

30014381, MV-09-10 Perform Votes Static Testing
31017156 01, Perform 36 month PM for 4.16 KV Breaker PSL-5-088, 7/26/02
32001321, MV-09-10 Remove/Reinstall Actuator
32008094 01, TS/125 V Battery 1A; Capacity Test (FYP8335), 3/25/04
32009249, MV-09-12 Remove/Reinstall Actuator
3201137101, Split Loop Calibration for SG 1A Pressure Loops P-8013A
32017029, MV-09-11 Replace Torque Switch
33002539, Repair body to bonnet leaks on valve MV-08-16, 03/31/04
33033957 MV-09-09 Perfom/Monitor D/P Test
33003956 MV-09-12 Perfom/Monitor D/P Test
3300433901, Split Loop Calibration for SG 1A Pressure Transmitter P-8013A
3300434801, Split Loop Calibration for SG 1A Level Transmitter L-9013A
33009254 02, Replace Breaker PSL-5-088, located in 4.16 KV Switchgear 2AB-1, with spare breaker (Breaker PSL-5-86), 11/7/03
3301448901, Split Loop Calibration for SG 1A Pressure Loops P-8013A
3301621501, AFAS Monthly Functional Test
3302025101, Split Loop Calibration for SG 1A Level Loops L-9013A
34004819 01, TS/125 V Battery 1A: Quarterly PM, 5/24/04
34007287, AFW Pump Room Sound Powered Phones Do Not Work, 7/13/04

34007854 01, TS/125 V Battery 1A: Quarterly PM, 8/30/04
34012785 01, Replace obsolete Westinghouse DHP breakers with new SF- 6 4.16 KV breakers, 4/6/05
34014826 01, TS/125 V Battery 1A Quarterly PM, 6/6/05
34017843, MV-09-09 Will Not Close
34018166 01, TS/125 V Battery 1A: Quarterly PM, 3/09/05
34018985, CCW 1B; Clean / Inspect / Plug Tubes As Necessary
35003119 01, TS/125 V Battery 1A; Quarterly PM, 11/30/04
35003507, CCW 1A; Pick and Clean Inlet Tube Sheet
3501450501, 1A3 4160V Incoming Feeder Compartment, 06/02/05

Modifications
ENG-SPSL-04-0032, MEP Package, Replace AFW Turbine Governor Replacement, Rev. 0

Miscellaneous
0702502, Main Power Distribution System, Training Lesson Plan, Rev. 13
0702501, Emergency Diesel Generator, Training Lesson Plan, Rev. 14
0711408, Steam Generators and Feedwater Control System, Rev. 16
0711412, Auxiliary Feedwater System and Auxiliary Feedwater Actuation System, Rev. 18
0711503, Unit 1 - 125 VDC System Lesson Plan, Rev.15
8770-6079 AFW Pump 711-N–0676 Performance Test Curve
8770-6078 AFW Pump 711-N–0675 Performance Test Curve
8770-6130, Borg-Warner Turbine Driven Auxilary Feedwater Pump Instruction Manual, Rev. 8
8770-6702, Terry Steam Turbine Company Turbine Driver for Auxiliary Feedwater Pump
Diesel Fuel Oil Monthly Particulate Analysis Trend
FPL/FPLE Quality Assurance Audit Report No. QAS-P&C-05-1, Protection and Control Audit, March 30, 2005 - May 17, 2005
GL 80-020, Auxiliary Feedwater Review, Dated March 10, 1980
JPM 0821024/R10, Reset 1C AFW Pump Electrical Overspeed Trip - Unit 1
JPM 0821053/Rev11, Locally Operate Atmospheric Dump Valve - Unit 1
JPM 0821054, Locally Operate 1C Auxiaiary Feedwater Pump, Rev. 17
JPM 0821054/R17, Locally Operate 1C Auxiliary Feedwater Pump
JPM 0821055/R16, Check 1C AFW Pump for Steam Binding
JPM 0821062/R15, Align Unit 2 CST to Supply 1C AFW Pump
JPM 0821068/R12, Align Emergency Cooling Water to the 1A Instrument Air Compressor and Start
JPM 0821072A/R09, Start 2B EDG Locally During SBO - Unit 2
JPM 0821072/R11, Start 2B EDG Locally During SBO - Unit 2
JPM 0821118/R11, Restore Power to 2B3 4.16KV Bus From Offsite - Unit 2
JPM 0821121/R10, Energize 4.16KV Bus 1B3 From Unit 2 via SBO Cross-tie Breaker - Unit 1
JPM 0821129T/R08, Restore Power to 2A3 Bus Via SBO Crosstie
NCR-2-349, Nonconformance Report on Turbine Auxiliary Feedwater Pump Starting Temperature
Simulator Exercise Guide IM 0714028, Loss of Offsite Power
Simulator Exercise Guide IM 0714029, Station Blackout
SIT Tank Level Trends

STD-C-008, General Civil Design Criteria for ST. Lucie Units 1 & 2, Rev. 1
Summary of St. Lucie Responses to INPO SOER 99-1, Loss of Grid
Woodward PG-Pl Governor Product Specification 36700G
Woodward Manual 25071J, Woodward Oils for Hydraulic Controls Instruction Manual, Rev. 17

Design Basis Documents (DBD)
DBD-120V-AC-1, Class 1E 120 V AC Power System, Rev. 1
DBD-4160VAC-1, 4160 VAC Distribution System, Rev. 1
DBD-480V-AC-1, 480 VAC Distribution System, Rev. 1
DBD-AFW-1, St. Lucie Unit 1 - Auxiliary Feed Water, Rev. 1
DBD-EDG-1, Emergency Diesel Generator System, Rev. 2
DBD-HPSI-1, St. Lucie Unit 1 - HPSI, Rev. 1
DBD-MSS-1, Main Steam Supply System, Rev. 2
DBD-SL1-SBO-1, Station Blackout Criteria, Rev. 1
DBD-VDC-1, Class 1E DC Electrical Distribution System, Rev. 1

Corrective Action Reports (CRs) Written Due to This Inspection
CR 2005-17257 Deficiency Tag Not Removed Upon Completion of Work Order
CR 2005-17501 Deficiency Tag Not Removed When Work Request Was Cancelled
CR 2005-17503 Deficiency Tag Not Removed When Work Request Was Cancelled
CR 2005-17574 Auxiliary Feedwater System Training Description Not Updated and Not Accurate
CR 2005-17705 Electrical One-Line Drawing 8770-G-275 Sheet 1 Shows AFW 1A and 1B Motor Ratings at 402HP (with 1.15 service factor) Instead of Name Plate Rating of 350HP
CR 2005-17815 Auxiliary Feedwater Student Text Did Not Adequately Address Plant Change From PCM 04012
CR 2005-17882 Engineering Needs to Review 1C Auxiliary Feedwater Pump Cold Weather Preparations and Requirements
CR 2005-17957 NRC Inspection Team Identified Steam Leak From MV-08-16
CR 2005-18053 Leak Repair Plugs Not Shown on Drawing for MV-08-16