



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

January 13, 2004

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 PLANT DESIGN - PILOT INSPECTION
REPORT NOS. 05000335/2003009 AND 05000389/2003009**

Dear Mr. Stall:

On December 19, 2003, the Nuclear Regulatory Commission (NRC) completed a plant design - pilot inspection at your St. Lucie Plant, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on December 19, 2003, with Mr. R. Hughes and other members of your staff.

This inspection was an examination of 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 operating license. Within these areas, the inspection involved selected examination of procedures and representative records, observations of activities, and interviews with personnel.

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

In accordance with 10 CFR 2.790 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

Enclosure: (See page 2)

Enclosure: NRC Inspection Report Nos. 05000335/2003009, 05000389/2003009
w/Attachment: Supplemental Information

cc w/encl:

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-335, 50-389

License Nos.: DPR-67, NPF-16

Report Nos.: 05000335/2003009 and 05000389/2003009

Licensee: Florida Power & Light Company (FPL)

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6351 South Ocean Drive
Jensen Beach, FL 34957

Dates: December 1-5, 2003
December 15-19, 2003

Inspectors: J. Moorman, Senior Reactor Inspector (Lead Inspector)
R. Cortes, Reactor Inspector
P. Fillion, Reactor Inspector (Week 2 only)
F. Jape, Senior Project Manager (Week 1 only)
K. Maxey, Reactor Inspector (Week 1 only)
N. Merriweather, Senior Reactor Inspector
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Accompanied by: H. Christensen, Deputy Director, Division of Reactor Safety
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D. Mas-Peñeranda, Reactor Inspector Intern
C. Ogle, Chief, Engineering Branch 1

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

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2003-009, 05000389/2003-009; 12/01-05/2003 and 12/15-19/2003; St. Lucie Nuclear Plant, Units 1 and 2; Plant Design - Pilot, Enclosures 1, 2, and 3.

This inspection was conducted by a team of regional inspectors. 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

1R.DS Plant Design - Pilot (71111.DS)

1R.DS1 Safety System Design and Performance Capability (71111.DS, Enclosure 1)

This team inspection reviewed selected components and operator actions that would be used to prevent or mitigate the consequences of a steam generator tube rupture (SGTR) event. Components in the main steam (MS) system, auxiliary feedwater (AFW) system, steam generator (SG) blowdown system, chemical and volume control system (CVCS), reactor coolant system (RCS), safety injection (SI) system, and radiation monitoring (RM) system were included. This inspection also examined supporting equipment, equipment which provides power to these components, and the associated instrumentation and controls. The SGTR event is a risk-significant event as determined by the licensee's probabilistic risk assessment.

.1 System Needs

.11 Process Medium

a. Inspection Scope

The team reviewed the AFW and selected emergency core cooling systems (ECCS) net positive suction head (NPSH) and water source calculations, licensing and design basis information, operating/lineup procedures, drawings, surveillance procedures, and vendor manuals. The review included the refueling water tank (RWT), the condensate storage tank (CST), the alternate AFW water supply from the Unit 2 CST, vortexing considerations, and minimum-flow flowpaths for AFW and ECCS pumps. The review also included the ability of the main steam atmospheric dump valves (ADV) to support RCS cooldown, and the ability of the high pressure safety injection (HPSI) pumps and pressurizer power operated relief valve (PORV) to provide feed and bleed cooling of the RCS. The team also conducted field walkdowns of these systems in Unit 1. The reviews and walkdowns were conducted to verify that system design, Technical Specifications (TS), and Updated Final Safety Analysis Report (UFSAR) assumptions were consistent with the actual capability of systems and equipment required to mitigate an SGTR event.

The team reviewed power sources for radiation monitoring instrumentation that would be used to mitigate an SGTR to verify that they were not subject to common cause failure.

b. Findings

No findings of significance were identified.

.12 Energy Sources

a. Inspection Scope

The team reviewed valve lineup procedures and walked down the energy sources of selected components to verify that selected portions of the systems' alignments were consistent with the design basis assumptions, performance requirements, and system operating procedures. Among the lineups reviewed were the steam supply to the turbine driven AFW pump (1C) and the feed water lineup from the AFW pumps (1A, 1B and 1C) to verify consistency with the system design. The team also reviewed the testing and maintenance history for the ADVs and the accessibility for the operators to manually operate the valves if instrument air were unavailable. This was done to verify that the actual capability of the system was consistent with the system design basis assumptions.

The team reviewed appropriate test and design documents to verify that the 125 Volts direct current (V dc) and 4.16 kiloVolts alternating current (kV ac) power sources for the AFW and HPSI systems motors and valves would be available and adequate in accordance with design basis documents. The team reviewed the 125 V dc battery load study, battery charger sizing calculation, and voltage drop study to verify that the dc system was capable of providing sufficient power during an SGTR event.

The team reviewed electrical control wiring diagrams, interviewed licensee engineers, performed walkdowns, and reviewed surveillance and calibration test records in order to verify that the electrical controls and instrumentation systems for the auxiliary feedwater actuation system, SG atmospheric dump valves, and the pressurizer PORVs were capable of operating in accordance with design bases document descriptions to mitigate an SGTR event. The team also examined several process variable indicators and recorders in the Unit 1 main control room, including radiation monitors, which would be used by operators during SGTR mitigation to verify that the instruments had the proper range and were functional with no significant outstanding work requests pending.

b. Findings

No findings of significance were identified.

.13 Operator Actions

a. Inspection Scope

The team reviewed emergency operating procedures (EOPs), off-normal operating procedures, annunciator response procedures, and operating procedures that would be used for identification and mitigation of an SGTR event. The procedure review was done to verify that the procedures were consistent with the UFSAR description of an SGTR event and with the owners' group guidelines, any step deviations were justified and reasonable, and the procedures were written clearly and unambiguously. The team conducted discussions with licensed operators and reviewed job performance measures and training lesson plans pertaining to an SGTR event to ensure that training was

consistent with the procedures. In addition, the team observed simulation of an SGTR event on the plant simulator and walked down portions of applicable procedures to verify that operator training, procedural guidance, and instrumentation were adequate to identify an SGTR event and implement post-event mitigation strategies.

b. Findings

No findings of significance were identified.

.14 Heat Removal

a. Inspection Scope

The team reviewed design calculations, drawings, surveillance and test procedures, and operating data for selected equipment to assess the reliability and availability of cooling for equipment required to mitigate an SGTR event. The team also walked down the equipment to verify that operating conditions were consistent with design assumptions. The equipment reviewed included HPSI and AFW pumps and testing of these pumps at both full and minimum flow conditions. The team also reviewed the shutdown cooling (SDC) valves coming off the RCS hot leg for availability after system depressurization to residual heat removal conditions.

The team reviewed historical temperature data for the Unit 1 station battery rooms to verify that the minimum and maximum room temperatures were within the allowable temperature limits specified for the batteries.

b. Findings

No findings of significance were identified.

.2 System Condition and Capability

.21 Installed Configuration

a. Inspection Scope

The team performed field walkdowns of selected components in the HPSI, AFW, and MS systems. One purpose of the walkdowns was to assess general material condition, installation configuration, and identify degraded conditions of components that could be used to mitigate an SGTR event. Particular attention was placed on verifying that selected valves and components in the AFW and HPSI systems were in their required position and were consistent with design drawings. Additionally, the team assessed the potential impact of external events on SGTR mitigation equipment; including flooding, missiles, high energy line breaks, and hurricanes. The team also inspected selected controls and indicators for appropriate human factors such as labeling arrangement and visibility.

The team walked down portions of the 125 V dc and 4.16 kV ac systems to verify that the installed configuration was consistent with design basis information. The team visually inspected the 4.16 kV ac switchgear and panels and the 125 V dc batteries and battery chargers, dc distribution panels, and dc switchgear to evaluate observable material condition.

The team inspected the as-built installation of the Unit 1 CST water level channels to verify that the instruments and sensing lines were routed and separated in accordance with the instrument installation details. The team also examined the freeze protection provided for the instruments and sensing lines to verify that it was consistent with the cold weather design requirements. The team performed walkdown inspections of the pressurizer PORVs, steam jet air ejector radiation monitor, and SG blowdown radiation monitor control circuits to verify that the control circuit components (e.g., fuses, switches, and contactors) were consistent with design output documents. The team also reviewed several indicators and recorders in the main control room to verify that the displayed parameters had ranges consistent with design requirements and were appropriate for the applications.

b. Findings

No findings of significance were identified.

.22 Operation

a. Inspection Scope

The team walked through, with a licensed operator, the Unit 1 EOP actions to locally operate the SG atmospheric dump valves, isolate a ruptured SG, and swap the AFW pumps' suction from the Unit 1 CST to the Unit 2 CST. The team reviewed the EOP actions to verify that human factors in the procedures and in the plant (e.g., clarity, lighting, accessibility, labeling) were adequate to support effective use of the procedures. The team also discussed selected tasks with health physics and chemistry personnel (who would be involved with operators to identify the SG with the ruptured tube) to verify that their tasks were procedurally controlled and they received training on the procedures.

The team walked down portions of the AFW, HPSI, and MS systems to verify that the system alignments were consistent with design and licensing basis assumptions, and they would be available for operators to mitigate an SGTR event. During the walkdowns, the team compared valve positions with those specified in the AFW, HPSI, and MS systems' piping and instrumentation drawings and operating procedure lineups; and observed the equipment material condition to verify that it would be adequate to support operator actions to mitigate an SGTR event.

b. Findings

No findings of significance were identified.

.23 Design

a. Inspection Scope

Mechanical Design

The team reviewed the HPSI and AFW pump vendor manuals, the UFSAR, and the TS to verify that vendor recommendations and licensing basis requirements had been appropriately translated into the design calculations and surveillance requirements. In addition, NPSH calculations and pump curve data were reviewed to verify that adequate water levels were available in the CST and RWT; and that vortexing had been addressed.

The team reviewed records of completed design changes, corrective maintenance, and preventive maintenance for the HPSI and AFW systems to verify that these activities were maintaining the assumptions of the licensing and design bases. During these reviews, the team focused on potential common mode failure vulnerabilities that could be introduced by design or maintenance activities.

Electrical, Instrumentation and Controls Design

The team reviewed the battery sizing calculation for the Unit 1 class 1E 125V dc electrical distribution system to assess its adequacy to provide power for selected components required to mitigate an SGTR event.

The team reviewed the uncertainty calculation and the calibration test records for the CST level channels to verify that the instruments had the proper range and accuracy for CST low level and low-low level alarms as required by operational procedures, TS, and setpoint documents. The team also reviewed the CST fabrication drawings and measured the elevation of the CST level transmitters to verify that the assumptions used in the loop uncertainty calculation were appropriate. The plant change and modification package that replaced several of the obsolete indicators in the Unit 1 main control room was reviewed to verify that the modification package required the replacement indicators to be seismically qualified.

b. Findings

No findings of significance were identified.

.24 Testing and Inspection

a. Inspection Scope

The team reviewed records of completed surveillance tests, performance tests, inspections, and predictive maintenance; and walked down selected components of the HPSI, AFW and MS systems to verify that the tests and inspections appropriately verified that licensing and design bases assumptions were being maintained. This review included tests of pump discharge pressures and flowrates during full and

recirculation flow conditions, valve stroke times, motor operated valve (MOV) torque and limit switch settings, and check valve operation; inspection of MOV operator components and grease; and analysis of pump bearing oil and vibration.

The team evaluated surveillance test records, including preventive maintenance and performance tests results for 125 V dc batteries 1A and 1B to verify that the batteries were capable of meeting design basis load requirements. The team also reviewed calibrations for the overcurrent and undervoltage protective relays to support proper operation of safety buses 1A-3 and 1B-3.

The team reviewed surveillance procedures and calibration test records of Unit 1 process instrument channels monitoring SG narrow range level, SG pressure, AFW flow, RCS pressure and temperature, pressurizer level, condenser air ejector radiation, steam line radiation, and SG blowdown radiation to verify that actions were prescribed consistent with the instrument design including setpoint documents, the Offsite Dose Calculation Manual, and TS.

b. Findings

No findings of significance were identified.

.3 Selected Components

.31 Component Degradation

a. Inspection Scope

The team reviewed system health reports, corrective maintenance records, condition reports, and performance trending of selected components in the HPSI, RCS, AFW and MS systems to verify that components that could be relied upon to mitigate an SGTR event were not degrading to unacceptable performance levels. The selected components included HPSI pumps, AFW pumps, HPSI MOVs (V3654, V3656, HCV-3616, 3626, 3636 & 3646); HPSI check valves (V3401, 3410, 3427, 3414, 3113, 3123, 3133 & 3143); AFW flow control valves (V09124, V09108, MV-09-9 thru 12); SDC MOVs (V3480, 3481, 3651 & 3652); pressurizer PORVs (V1402 and 1404); MS ADVs (HCV-08-2A & 2B) and main steam isolation valves (HCV-08-1A & 1B). In addition, the team examined the Unit 1 turbine driven AFW steam supply piping for inclusion of steam traps that would prohibit water accumulation in the piping system and prevent occurrences of water hammer or pump overspeed trip events.

The team reviewed preventive maintenance records for 125 V dc batteries and chargers as well as AFW pump motors and MOVs to verify the program was being implemented. Additionally, the team examined preventive maintenance records for selected 4.16 kV circuit breakers to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of the components in the system. Also, the team reviewed replacement activities as well as commercial dedication packages for selected Class 1E electrical components to evaluate their technical adequacy and to verify that quality assurance requirements were being met.

The team reviewed all documented failures of 4.16 and 6.9 kV circuit breakers on both units that occurred from January 1, 2001, to the date of this inspection. The root cause evaluation for 1B HPSI pump circuit breaker failure which occurred on April 10, 2002, was reviewed in detail. In cases where the root cause investigation was not complete at the time of this inspection, the status of the investigation and preliminary conclusions were discussed with a cognizant engineer. As part of the circuit breaker failure review, the team examined outdoor switchgear where a number of failures had taken place. A 4.16 kV circuit breaker was examined in the maintenance training facility. Portions of manufacturer's instruction manuals, control circuit diagrams, preventive maintenance procedures and troubleshooting procedures were reviewed. The main objective of this review was to verify that the licensee was meeting the requirements of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, with regard to the circuit breaker failures. The review also addressed the inspection procedure requirement to evaluate potential common cause failure modes and equipment degradation.

The team reviewed the maintenance history of selected process monitoring instrumentation and radiation monitors to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of the components in the system. The specific work orders and other related documents reviewed are listed in the attachment.

b. Findings

No findings of significance were identified.

.32 Equipment/Environmental Qualification

a. Inspection Scope

During walkdowns, a primary focus for the team was to observe whether the selected mechanical components and electrical connections to those components appeared to be suitable for the environment expected under all conditions, including high energy line breaks.

The team reviewed environmental qualification documentation for watt transducers for safety-related switchgear to verify that environmental qualification test reports demonstrated the instruments were suitable for their application.

b. Findings

No findings of significance were identified.

.33 Equipment Protection

a. Inspection Scope

The team conducted equipment walkdowns to observe whether the selected components appeared to be adequately protected from potential effects of flooding, high winds, missiles, and high or low outdoor temperatures.

b. Findings

No findings of significance were identified.

.34 Operating Experience

a. Inspection Scope

The team reviewed the licensee's dispositions of operating experience reports related to the SGTR events at Palo Verde and Indian Point Nuclear Stations to verify that applicable insights from those reports had been applied to plant procedures and operator training.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed selected system health reports, maintenance rule reports, condition reports, surveillance tests, and maintenance work orders to verify that the licensee had appropriately identified and resolved problems.

The team reviewed corrective action documents related to the 125 V dc and 4.16 kV ac systems to verify that the licensee was identifying issues and entering them into their corrective action program.

The team reviewed corrective maintenance work orders and condition reports on instrument power supply failures to evaluate failure trends and to verify that appropriate corrective action had been taken to resolve the problem. The team also reviewed a Unit 2 condition report involving air in the HPSI flow transmitters to verify that appropriate corrective action had been planned to prevent this problem from occurring on Unit 1.

b. Findings

No findings of significance were identified.

1R.DS2 Permanent Plant Modifications (71111.DS, Enclosure 2)

a. Inspection Scope

The team evaluated design change packages for seven modifications, in all three cornerstone areas, to verify that the modifications did not degrade system availability, reliability, or functional capability. The team reviewed attributes such as: energy requirements can be supplied by supporting systems; materials and replacement components were compatible with physical interfaces; replacement components were seismically qualified for application; Code and safety classification of replacement system, structures, and components were consistent with design bases; modification design assumptions were appropriate; post-modification testing established operability; failure modes introduced by the modification were bounded by existing analyses; and appropriate procedures or procedure changes had been initiated. For selected modification packages, the team reviewed the as-built configuration to verify that it was consistent with the design documentation.

Documents reviewed included procedures, engineering calculations, modifications, work orders, site drawings, corrective action documents, applicable sections of the UFSAR, supporting analyses, TS, and design basis documentation. The samples reviewed are listed below:

- PCM 02016, Rev 0, Time Delay Relay Setpoint Change for EDG Output Breaker
- PCM 02073, Rev 0, Control Room Door Replacement of Unit 2
- PCM 02146, Rev 0, Replacement of Starting Air Components on 1A and 1B EDG with Stainless Steel
- CM 03091, Rev 0, Abandonment of Unit 2 Boronmeter
- CM 00042, Setpoint Change for listed valves
- PCM 00071, Rev 0 Actuator Mod
- PCM 01166, Rev 0, Replacement of EDG 1A Woodward Electric Governor
- PCM 02173, Rev 0, RCS Hot Leg Nozzle Replacement

b. Findings

No findings of significance were identified.

1R.DS3 10 CFR 50.59 Safety Evaluations (71111.DS, Enclosure 3)

a. Inspection Scope

The team reviewed selected samples of evaluations to verify that the licensee had appropriately considered the conditions under which changes to the facility or procedures may be made, and tests conducted, without prior NRC approval. The team reviewed evaluations for seven changes. The team verified, through review of additional information, such as calculations, supporting analyses and drawings that the licensee had appropriately concluded that the changes could be accomplished without obtaining a license amendment. The seven evaluations reviewed are listed below:

- SENS-97-006, Performance of Full Core Refueling Offloads, Rev 5
- PCM 02142, Unit 2 Cycle 14 Fuel Reload, Rev 1
- SENS-02-010, Containment Purge System Isolation Valves, Rev 0
- SEF-J-02-009, Evaluation of Higher Operating Limit for Silica in the RCS, Rev 1
- PCM 02014, St. Lucie Unit 1 Cycle 18 Reload, Rev 0
- PCM 99170, Removal of Unit 2 Spent Fuel Storage Cell Blocking Devices, Rev 2
- PCM 02042, Replacement of the Unit 2 DDPS and SOER and Installation of a Plant Data Network, Rev 1

The team also reviewed samples of design and engineering packages and procedure changes for which the licensee had determined that evaluations were not required. This review was performed to verify that the licensee's conclusions to "screen out" these changes were correct and consistent with 10 CFR 50.59. The 12 "screened out" changes reviewed are listed below:

- MSP 03065, Replacement of Personnel Airlock Outer Door Operator Coupling, Rev 0
- PSM 03055, Temporary Turbine Lube Oil Conditioner for Moisture Removal, Suppl 0
- MSP 03030, PDIS-2216 Snubber Installation, Rev 0
- PCM 02173M, RCS Hot Leg Nozzle Replacement, Suppl 0
- MSP 02093, Pressurizer Spray Bypass Valves V1236, V1237 Replacement, Rev 0
- PCM 02088, Condenser Door Installation, Suppl 0
- MSP 02087, FCV-9011/9021 Positioner Change, Rev 0
- PCM 02017M, Time Delay Relay Setpoint Change for EDG 1A/1B Output Breaker, Suppl 0
- PCM 01068, EDG Cooling Water System Relief Valve, Rev 1
- PCM 02001M, Eberline Medium Range Gas Detector Upgrade for Low-Fail Alarms, Suppl 0
- PCM 02015M, Functional Removal of the 2A/2B Manual Voltage, Suppl 0 Regulator
- PCM 02062M, HPSI/CCW Pump Motor EDG Load Block Swap, Suppl 0

The team also reviewed the results of the licensee's recent quality assurance audit reports of engineering activities and condition reports related to the 10 CFR 50.59 process. The documents are listed in the Attachment.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

40A6 Meetings, Including Exit

The lead inspector presented the inspection results to Mr. Hughes, and other members of the licensee staff, at an exit meeting on December 19, 2003. 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 Engineer
R. Hanke, Maintenance
J. Heinhold, Secondary Chemistry Supervisor
J. Hoffman, Design Engineering Manager
R. Hughes, Site Engineering Manager
B. Jefferson, Site Vice-President
K. Jennings, Performance Improvement Department Supervisor
A. Locke, Chemistry Supervisor
M. Norris, Health Physics Supervisor
W. Parks, Operations Support Manager
T. Patterson, Licensing Manager
L. Porro, Simulator Engineering Section Supervisor
V. Rubano, Engineering Project Manager

NRC (attended exit meeting)

H. Christensen, Deputy Director, Division of Reactor Safety
T. Ross, Senior Resident Inspector
S. Sanchez, Resident Inspector

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None.

LIST OF DOCUMENTS REVIEWED

Instructions/Procedures

0-GMP-26, Relief Valve Testing Using the New Test Bench, Rev. 3
0-GMP-27, Relief Valve Testing Using the Old Test Bench, Rev. 3
0-MMP-100.01, Plant Rotating Equipment Alignment, Rev. 1A
1-0410050, HPSI/LPSI Periodic Test, Rev. 75
1-0410052, Safety Injection Check Valve Backleakage, Rev. 7C
1-0700031, Unit 1 Off Normal Operating Procedure, Auxiliary Feedwater, Rev. 21
1-0700050, Auxiliary Feedwater Periodic Test, Rev. 81
1-0830030, Unit 1 Off Normal Operating Procedure, Steam Generator Tube Leak, Rev. 27
1-ARP-01-X00, Unit 1 Annunciator Response Procedure, Radiation Monitor Panel, Rev. 1
1-EOP-01, Unit 1 Emergency Operating Procedure, Standard Post Trip Actions, Rev. 19
1-EOP-04, Unit 1 Emergency Operating Procedure, Steam Generator Tube Rupture, Rev. 20
1-EOP-99, Unit 1 Emergency Operating Procedure, Appendices/Figures/Tables/Data Sheets, Rev. 34

Attachment

1-IMP-01.03, Verification of Shutdown Cooling System Open Permissive Interlock and Open/Hi Alarm Rev.3
 1-IMP-26.15E, DAM-3 Steam Line Process Radiation Monitor Functional Test Instructions St. Lucie Unit 1, Rev. 3
 1-IMP-26.15E, DAM-3 Steam Line Process Radiation Monitor Secondary Calibration Instructions St. Lucie Unit 1, Rev. 2
 1-IMP-26.17, CAE Process Monitor Functional and Calibration Instruction, Rev. 5
 1-IMP-26.18, SG Blowdown Process Monitor Functional and Calibration Instruction, Rev. 3B
 1-IMP-26.30, Primary Calibration of Victoreen Liquid Process Monitors, Rev. 2
 1-M-0037, Power Operated Relief Valve Maintenance, Rev. 17
 1-MMP-09.04, Auxiliary Feedwater Turbine Overspeed Trip Tests Using Compressed Air,
 1-MP-26.16, Process Monitoring System Operation Instructions St. Lucie Unit 1, Rev. 7
 1-MSP-08.07, Main Steam Safety Valve Setpoint Rev. 2E
 1-ONP-26.01, Unit 1 Off Normal Operating Procedure, Process Radiation Monitors, Rev. 3A
 1-OSP-03.01B, 1B HPSI Pump Safeguards Full Flow Test Rev. 4
 1-OSP-03.02A, 1A LPSI Flow Test, Rev. 0B
 1-OSP-09.111A, Monitoring 1C AFW Header for Water Hammer Conditions, Rev. 2
 1-OSP-09.111B, Monitoring 1B AFW Header for Water Hammer Conditions, Rev. 2
 1-OSP-09.111C, Monitoring 1A AFW Header for Water Hammer Conditions, Rev. 2
 2-0830030, Unit 2 Off Normal Operating Procedure, Steam Generator Tube Leak, Rev. 27
 2-EOP-01, Unit 2 Emergency Operating Procedure, Standard Post Trip Actions, Rev. 22
 2-EOP-04, Unit 2 Emergency Operating Procedure, Steam Generator Tube Rupture, Rev.
 2-EOP-99, Unit 2 Emergency Operating Procedure, Appendices/Figures/Tables/Data Sheets, Rev. 28
 ADM-04.03, Administrative Procedure, Cold Weather Preparations, Rev. 12
 ADM-11.08, Processing Change Authorization Requests, Rev 8A
 ADM-11.09, Emergency and Off-Normal Operating Procedure Writer's Guide, Rev. 2B
 ADM-17.08, Implementation of 10CFR50.65, the Maintenance Rule, Rev. 14B (pages 39-43)
 ADM-17.11, 10 CFR 50.59 Screening, Rev 2B
 ADM-17.16, Implementation of the Configuration Risk Management Program, Rev. 4
 COP-06.05, Chemistry Operating Procedure, High Activity in a Steam Generator, Rev. 7
 COP-07.05, Process Monitor Setpoints, Rev. 7
 COP-07.05, Chemistry Operating Procedure, Process Monitor Setpoints, Rev. 7
 COP-65.02, Chemistry Operating Procedure, Effluent Grab Sampling, Rev. 12
 EMP-80.06, Preventive Maintenance of Non-Environmentally Qualified Limitorque MOV actuators Rev. 9
 EMP-80.07, Preventive Maintenance of Environmentally Qualified Limitorque MOV Actuators, Rev. 13
 EMP-80.11, VOTES testing of Globe and Gate Valves, Rev. 6
 ENG-QI 2.1, 10CFR50.59 Applicability/Screening/Evaluation, Rev 5
 ENG-QI 1.0, Design Control, Rev 18
 HP-204, Health Physics Procedure, In-Plant Radiation and Contamination Surveys During Emergencies, Rev. 8A
 HPP-20, Health Physics Procedure, Area Radiation and Contamination Surveys, Rev. 18
 MTE-02.01, Safety Valve Test System Calibration, Rev. 3C
 Rev. 3B

Drawings

2998-9184, Condensate Storage Tank Field Notes and Fittings, Rev. 3
 2998-9185, Condensate Storage Tank - General Notes, Rev. 3
 2998-G-080, Unit 2 Feedwater and Condensate Systems Flow Diagram, Sheet 2B, Rev. 35
 8770-3081, HI Press SI Pump 200114 Performance Test Curve, Rev. 0
 8770-3083, HI Press SI Pump 200115 Performance Test Curve, Rev. 0
 8770-4769, Condensate Storage Tank, Rev. 8
 8770-4769, Condensate Storage Tank, Rev. 8
 8770-4770, Details for Condensate Storage & Diesel Oil Storage Tank, Rev. 6
 8770-6078, Auxiliary Steam Generator Feedwater Pump 711-N-0675 Performance Test Curves, Rev. 0
 8770-6079, Auxiliary Steam Generator Feedwater Pump 711-N-0676 Performance Test Curves, Rev. 0
 8770-6083, Auxiliary Steam Generator Feedwater Pump 711-N-0677 Performance Test Curves, Rev. 0
 8770-B-231, Sheet 12-22, Instrument Installation Details, Rev. 1
 8770-B-327, Sheet 359, CWD Noble Gas Radiation Monitors (DAM-3) Channels 62 & 63, Rev. 1
 8770-B-327, Sheet 438, CWD Radiation Monitoring Panel 120 VAC, 125 VDC & 120 VAC MEAS CH'S DISTR, Rev. 13
 8770-B-327, Sheet 744, CWD Condensate Storage Tank, Rev. 9
 8770-B-327, Sheet 459, Control Wiring Diagram (CWD) SG 1A & 1B Blowdown Radiation Monitor, Rev. 12
 8770-B-327, Sheet 603, CWD SG 1A & 1B Atmospheric Steam Dump & Feedwater Discharge Header Pressure, Rev. 18
 8770-B-327, Sheet 452, CWD Process Radiation CH 35, Rev. 14
 8770-B-335, Sheet 54A, Unit 1 Power Distribution & Motor Data, Rev. 18
 8770-B-335, Sheet 53A, Unit 1 Power Distribution & Motor Data, Rev. 18
 8770-G-078 Sheet 110A, Flow Diagram, Reactor Coolant System, Rev. 27
 8770-G-078 Sheet 120B, Flow Diagram, Chemical & Volume Control System, Rev. 16
 8770-G-078 Sheet 130A, Flow Diagram, Safety Injection System, Rev. 26
 8770-G-078 Sheet 130B, Flow Diagram, Safety Injection System, Rev. 28
 8770-G-078 Sheet 131A, Flow Diagram, Safety Injection System, Rev. 26
 8770-G-079 Sheet 7, Flow Diagram, Main Steam System, Rev. 4
 8770-G-079, Unit 1 Main Steam System Flow Diagram, Sheet 1, Rev. 47
 8770-G-079 Sheet 1, Flow Diagram, Main Steam System, Rev. 47
 8770-G-079 Sheet 2, Flow Diagram, Main Steam System, Rev. 41
 8770-G-080 Sheet 4, Flow Diagram, Feedwater & Condensate Systems, Rev. 36
 8770-G-080 Sheet 3, Flow Diagram, Feedwater & Condensate Systems, Rev. 47
 8770-G-083 Sheet 1A, Flow Diagram, Component Cooling System, Rev. 56
 904588, System Power Distribution, Rev. E

Calculations

C-200, Offsite Dose Calculation Manual (ODCM), Rev. 25
 NSSS-004, RWT Volume for Post LOCA Heat Removal

PSL-1-F-J-E-90-0014, Unit 1 Battery Chargers 1A, 1AA, 1B, 1BB, and 1AB Sizing, Rev 1
 PSL-1-F-J-E-90-0015, Safety Related Batteries 1A and 1B, Rev 2
 PSL-1-FJE-90-002, GL 89-10 MOV Cable Voltage Drop, St. Lucie Unit 1, Rev. 7
 PSL-1FJE-90-0014, Unit 1 Battery Chargers 1A, 1AA, 1B, 1BB, and 1AB Sizing, Rev. 1
 PSL-1FJE-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-92-011, PSL 1 Refueling Water Tank Level RAS Bistable Setpoint (L-07-2), Rev. 2
 PSL-1FJM-91-011, NRC Generic Letter 89-10 MOV Design Basis Different Pressure Determination
 PSL-1FJM-91-017, NRC GL 89-10, Gate/Globe Valve Motor Operator Evaluations (page 18 of 26 and Attachment 15), Rev.12
 PSL-1FSM-96-016, Motor Driven Auxiliary Feedwater Pump Flow Determination, Rev. 0
 PSL-1FSM-97-002, Steam Driven Auxiliary Feedwater Pump Flow Determination, Rev. 1
 PSL-1FSM-97-025, AFW System NPSH Review using Unit 1 CST Supply, Rev. 0
 PSL-1FSM-97-032, Condensate Storage Tank Volume Requirements, Rev. 1
 PSL-2FJI-92-008, PSL 2 Refueling Water Tank Level Setpoint (Loops L-07-1 & L-07-2), Rev. 1
 PSL-2FJM-048, St Lucie unit 2 Generic Letter 89-10 Gate and Globe Valve Required Stem Thrust and Actuator Torque Switch Setting Evaluation
 WCAP-15973-P, Low Alloy Steel Component Corrosion Analysis Supporting Small Diameter Alloy 600/690 Nozzle Repair/Replacement Programs

Evaluations

059369, Commercial Grade Dedication Master Report, 4/12/01

Technical Specifications

3.3.3.8, Accident Monitoring Instrumentation

4.3.3, Radiation Monitoring Instrumentation

Table 3.3-3, Engineered Safety Feature Actuation System Instrumentation

Table 3.3-4, Engineered Safety Feature Actuation System Instrumentation Trip Values

Table 4.3-2, Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements

Table 4.3-3, Radiation Monitoring Instrumentation Surveillance Requirements

Table 3.3-6, Radiation Monitoring Instrumentation

Table 3.3-11, Accident Monitoring Instrumentation

Table 4.3-7, Accident Monitoring Instrumentation Surveillance Requirements

Completed Work Orders (WOs) and Work Requests (WRs)

0006776, PSL-5-017: Perform 36 Month BKR PM, 10/31/00

18016476, Wrong oil was added to the pump oil bulb on HPSI pump 1C, 3/10/88

19016273, PM lubrication of HPSI pump 1B, 04/03/89

20018458, Boric acid on seal cooling separator needs cleaning/tightening (HPSI 1A), 05/30/90

21030119, PM lubrication of HPSI pump 1C, 07/31/91

21030137, Pipe plug leaking on HPSI 1A, 09/13/91
 21032261-01, Stop check valve for HPSI 1A discharge packing leak / 20 DPM, 11/08/91
 21034187, PM lubrication of HPSI pump 1A, 10/21/91
 25023478, Boric acid leak at base of pump suction, 05/11/96
 26018487-01, Check valve for charging pump 1C discharge inspect valve internally, 07/22/96
 30004646-01, V3481: Perform 36 month operator PM, 10/11/02
 30004736-01, MV-02-1: Perform 36 month actuator PM (FYP8600), 04/06/01
 30006775-01, V3480: Perform 36 month operator PM, 10/11/02
 30011455-1A, Section XI replace pilot disc, 04/14/01
 30013400-01, U/1 HCV-3646, Perform votes static test, 10/25/00
 30013402-01, U/1 HCV-3636, Perform votes static test, 10/25/00
 30013405-01, U/1 HCV-3616, Perform votes static test, 10/25/00
 30013660, V3480: Perform valve steam lubrication
 31008945-03, V3652 Adjust closing torque setting, 04/16/01
 31010611, PSL-5-042, Swap (4.46 kV SWGR 1B3-6, 12/17/02
 31010757-01, 1C AFW pump limit switch 3 out of adjustment, 07/25/01
 31011782, CR 02-0059, PSL-5-014 144 Mo. BKR O/H, 1/14/02
 31013356, HCV-3638 Investigate DC Ground Alarm, 7/23/01
 31018672, Motor for HP Safety Injection Pump 1A, 8/15/03
 31018673, V3651:36 Monthly valve stem lube (FYP8630A)
 31024181, PSL-5-106: CR01-3248: Inst Seismic Cover, 1/14/02
 31024308, TS/FYP8112 SDC system permissive interlock
 32000680-01, FYP 3609 V1404 PORV for pressurizer to quench, 10/03/02
 32001190-01, U/1 HCV-3636, Perform votes static test, 08/21/02
 32001191-01, U/1 HCV-3626, Perform votes static test, 08/21/02
 32001242-01, U/1 HCV-3646, Perform votes static test, 08/21/02
 32001347-02, PM18-905, Rebuild valve, 04/04/02
 32001453-01, FYP 1058 AFW pump 1C turbine overspeed test, 10/14/02
 32002389-03, CR-03-2536; Retest for set pressure 220, 08/07/03
 32004431-01, U/1; HCV-3616: Perform operator PM, 08/21/02
 32005720-01, FYP8665: V3480 Votes static test, 11/12/02
 32006994, 4.16 kV SWGR 1B3-5 Troubleshoot Repair, 4/11/02
 32007850, 125 V DC Bus Power Distribution Panel ESS-SA, 10/10/02
 32007850, 125V DC Bus 1A; Circuit 21 & 22 Testing, 10/10/02
 32011990, Motor for LP Safety Injection Pump 1B, 3/17/03
 32014219, PSL-5-039 PM Breaker for Contingency, 8/12/02
 32017530, Motor for LP Safety Injection Pump 1B, 10/7/02
 32017536, Motor for LP Safety Injection Pump 1A, 10/10/03
 32017916-04, AFW pump 1A, support ESF testing
 32018252, PSL-5-061: PM Breaker for Installation, 10/19/02
 33002667, TS/1A 125V Battery, Quarterly PM, 6/10/03
 33005604, TS/125V Batt 1B: Perform Qtrly PM, 6/23/03
 33010067, 125V Batt 1A: Clean Corrosion from Cells (8/26/03)
 95000883-01, Leaks by thru V3113 and thru HCV-3617/ replace valve, 05/22/96
 95009646-01, Stop check valve on HPSI 1B discharge leak-off piping boron buildup, 04/18/95
 95026389-01, FYP3640 Check valve inspection for HPSI pump 1B & 1C suction, 05/31/96

97020753-01, HCV-3636 Adjust packing, 12/19/97
 97027581-01, HCV-3646 Adjust packing, 12/18/97
 98019012-01, HCV-3646 Replace actuator gear per PCM99020, 09/29/99
 98019014-01, HCV-3636 Replace actuator gear per PCM99020, 06/17/99
 98019072-04, V3651 Consolidate / votes, 10/01/99
 99017136-01, V3481 Consolidate packing, 09/26/99
 RWO 99-0013, 1B3 4160V Bus Maintenance, 9/29/99
 RWO 01-0007, 1B3 4160V Bus Maintenance, 4/16/01
 RWO 02-0017, Calibrate Degraded Grid Relays for 1A3 and 1A2 Buses, 10/7/02
 RWO 01-0019, Replace Defective Watt Transducer, 4/13/01
 RWO 99-0012, 1A3 4160V Bus Maintenance, 9/23/99
 WO 33017009, TS/125V Batt 1B: Perform Qtrly PM, 12/03/03

Surveillance Work Orders

3102431001, L-1110X Loop Calibration
 3001005001, L-1110X Loop Calibration
 3102452301, L-1110Y Loop Calibration
 3001007201, L-1110Y Loop Calibration
 3301621301, DAM-3 Channel Functional Test
 3301095701, Condenser Air Ejector (CAE) Radiation Monitor Functional Test and Calibration
 3301421401, CAE and Steam Generator (SG) Blowdown Rad Monitors Monthly Source Check
 3301467801, Functional Test of SG Blowdown Radiation Monitors
 3201602701, CAE Process Monitor Functional Test and Calibration
 3102319301, SG Blowdown Channel Calibrations and Functionals
 9701033101, Primary Calibration and Functional Tests for Unit 1 SG Blowdown Rad Monitors
 3102358001, P-1107 & P-1108 Loop Calibrations and Functional Test
 3001108201, P-1107 & P-1108 Loop Calibrations and Functional Test
 3001007201, Split Loop Calibrations of L-9013B and L-9023B
 3001465601, Split Loop Calibrations of L-9023A, -B, -C, -D
 3001465701, Split Loop Calibrations of L-9013A and -9023A
 320099710, Calibration of Pressure Loops Associated with Feedwater Header SG 1A/B Inlet
 3100474701, L-12-11 Loop Calibration
 3201340601, L-12-11 Loop Calibration
 3102263001, L-12-12 Loop Calibration
 3000982901, L-12-12 Loop Calibration
 3200528201, Split Loop Calibration for SG 1B Pressure Loops P-8023A,B,C,D
 3001765801, Split Loop Calibration for SG 1A Pressure Loops P-8013A,B,C,D
 3001757601, Split Loop Calibration for SG 1B Pressure Loops P-8023A,B,C,D
 3201137101, Split Loop Calibration for SG 1A Pressure Loops P-8013A,B,C,D
 3301621501, AFAS Monthly Functional Test
 3300908701, Functional Test of SG Blowdown Rad Monitors
 3201745201, DAM-3 Channel Calibration
 3301090501, DAM-3 Channel Functional Test
 3301095701, CAE Calibration and Functional Test
 3301274301, Monthly Source Check of SG Blowdown and CAE Rad Monitors

Corrective Work Orders

31003750, ERDADS Point PT1108-1 out of Tolerance
 3201483601, P-09-10D Power Supply Failure
 3201463901, P-09-09A, Loop Current is failing Low

Condition Reports (CRs)

96-2725 1, MOV Actuator Guidance
 97-2604, HCV-3626, 3636, 3646 Torque Switches setting Problems during Testing
 00-1104, INPO SEN 213 - Indian Point 2 Steam Generator Tube Failure
 00-1869, Incomplete commercial grade dedication
 01-0324, Lamda Power Supply from Stores Failed its Bench Test
 01-0325, Power Supply from Stores did not Meet Manufacturers Specs when Bench Tested
 01-0697, Pressure Testing Transducer PSL-2080 Found Out of Calibration High
 01-0847, 480 V 1B2 Load Center Has Red Substance, 4/11/01
 01-0943, 4.16 KV Breaker Installed in Incorrect Cubicle, 4/14/01
 01-0966, Remove Resistor and Perform Testing and Reinstallation, 4/15/01
 01-0986, PORV(V1402/1404) Valve Plug Stroke Length Testing Measurement Inaccuracies
 01-1121, CR Not Provided to Safety Supervisor for Review, 5/24/01
 01-1653, 1B2 Load Center Lift Device Installed Without Issuing CRN, 8/1/01
 01-2578, DC Ground on "A" Bus, 10/26/01
 01-2666, Specific Gravity for Battery 1D Below Nominal, 12/7/01
 01-2772, Packing Leak on 1A MSIV
 01-3018, 1A Steam Generator ADV, HCV-08-2A, Stroke Open Time Outside Limiting Range
 01-3128, On EEL-Evaluate Equipments Inoperability Effect on Safe Shutdown
 02-0704, Failure of circuit breaker for 1B high pressure safety injection pump
 02-0723, Operating Experience for Degraded Wiring of Relays, 5/13/02
 02-0746, Human Factors Issue With Breakers, 5/16/02
 02-0829, Potential generic problem with anti-pump relay in medium-voltage circuit breakers
 02-1098, Abandonment of PDIS-12-51A&B Due to the Removal of Main Feedwater Pump Suction Strainers, 6/27/02
 02-1215, 1A Battery Cell #29 did not Meet "Category B Limits" of Technical Specifications for Connected Cells, 6/12/02
 02-1335, Breaker Truck Module Incorrectly Identified in Breaker Swap, 7/19/02
 02-1392, Installation of Spring Charging Switch in Unit 1 HVE-10B, 7/25/02
 02-1397, 125VDC Battery Charger Discrepancies Between Procedures and Historical PCMs, 7/26/02
 02-1550, Procedure Change Requests were distributed prior to completion as required by QI-5-PSL-1
 02-1550, Incomplete procedure change requests
 02-1991, Temperature Differential on DC Output Breaker, 10/16/02
 02-2005, Unit 1 A & B Station Batteries Failed Acceptance Testing, 10/17/02
 02-2100, Cracks in 2A Battery Cells Jars #1 and #30, 10/26/02
 02-2177, Trim Cover Plates for HFB DC Breakers Do Not Fit, 11/18/02
 02-2241, HCV-08-1A AOV Diagnostic Testing Category 1 Failed Critical Value Data

02-2324, HCV-08-2A Dampner gap between Jam Nut and Upper Stem end, Drawings shows snug again the jam nut.
 02-2364, HCV-08-1B AOV Diagnostic Test Failed to Meet Targets
 02-2368, Inadequate Planning for Truck Operated Cell Switch Replacement, 11/18/02
 02-2385, Labeling Deficiency on 480 V Load Center K300 Series, 11/18/02
 02-2559, Add Restoration Activities to Outage Schedule, 11/18/02
 02-2563, HCV-08-2B Exceeded Stroke Time Range
 02-2576, 1B Battery Resistances Values Above Maintenance Action Requirements, 10/17/02
 02-2600, Feeder Breaker to 480 V Load Center 1B2 Failure to Close, 11/18/02
 02-2650, Failure of circuit breaker for 1B auxiliary feedwater pump
 02-2944, Circuit breaker 2-20701 at bus 2B4 failed to close
 03-0116 supplement 2, Check Valve V08163 Minor Body to Cover Leak
 03-0143, Various air operated valves are on the operator work-around list
 03-0383, 1B2 Load Center Under Voltage Relay Test Switch Cover Not Installed, 3/12/03
 03-0653-1, 1A AFW Axial Vibrations During Testing
 03-0840, Sample panel completed without an engineering evaluation
 03-0840, Sample panel installed w/o engineering evaluation
 03-1641, 2B Hot Leg
 03-1660, Hot Leg RTD Nozzle
 03-1894, HPSI Flow Transmitters/Flow Indicators are very erratic
 03-2068, 480 V breaker PLS-4031 Vendor Refurbishment Errors, 6/25/03
 03-2707, LCV-34-1 repeat valve leakage problems
 03-3022, Leaking vent valve, V3506
 03-3022, U-2 RAB fluids outside containment
 03-3025, LCV-12-21 leakage
 03-3063, Degraded Voltage Relay Setpoints, 8/25/03
 03-3461, Untimely completion of QI-7-PSL-1
 03-3461, Untimely completion of QI-7-PSL-1
 03-3495, Time required for development of Engineering Plant Change Packages
 03-4217, Circuit breaker 2-20701 at bus 2B4 failed to close
 03-4220, Initiates a root cause analysis for multiple breaker problems overall
 03-4505, PORV valves for Unit 1 were not included into calculation PSL-1-F-J-E-90-0015, 12/18/03

Design Basis Documents

Design Basis Document No. DBD-AFW-1, St. Lucie Unit 1 - Auxiliary Feed Water, Rev. 1
 Design Basis Document No. DBD-CVCS-1, St. Lucie Unit 1 - Chemical and Volume Control System, Rev. 1
 Design Basis Document No. DBD-RCS-1, St. Lucie Unit 1 - Reactor Coolant System, Rev. 1
 Design Basis Document No. DBD-HPSI-1, St. Lucie Unit 1 - High Pressure Safety Injection System, Rev. 1
 Design Basis Document No. DBD-SDC-1, St. Lucie Unit 1 - Low Pressure Safety Injection and Shutdown Cooling System, Rev. 1
 Design Basis Document No. DBD-MSS-1, St. Lucie Unit 1 - Main Steam Supply System, Rev. 1
 Design Basis Document No. DBD-VDC-1 Class 1E DC Electrical Distribution System, Rev.

UFSAR

UFSAR Section 6.1, Engineering Safety Features (pages 6.1.1-6.1.3)
 UFSAR Section 6.3, Emergency Core Cooling System (pages 6.3.1-6.3.28)
 UFSAR Section 7.3, Engineering Safety Features Systems (pages 7.3.1-7.3.11)
 UFSAR Section 7.4, Systems required for Safe Shutdown (pages 7.4.1-7.4.12)
 UFSAR Section 10.1, Steam and Power Conversion System (pages 10.1.1-10.1.12)
 UFSAR Section 10.3, Main Steam Supply System (pages 10.3.1-10.3.4)
 UFSAR Section 10.5, Auxiliary Feedwater System (pages 10.5.1-10.5.2)
 UFSAR Section 15.4.4, Steam Generator Tube Rupture (pages 10.4.4.1-10.4.4.7)
 UFSAR Section 7.3.1.1.13, Auxiliary Feedwater Actuation Signals (AFAS-1 & AFAS-2)
 UFSAR Section 7.5.1.5.2/3, Pressurizer Pressure/Level
 UFSAR Section 7.5.1.5.5, SG Pressure
 UFSAR Section 7.5.1.5.6, SG Level
 Table 7.5-2, Safety Related Display Instrumentation
 Table 7.5-3, Accident/Incident Instrumentation Requirements
 Table 13.8.2-1, Reactor Protection System Instrument Response Times
 Table 13.8.2-2, Engineered Safety Features Actuation System Response Times

Lesson Plans/Job Performance Measures (JPM)

0702812, Rev. 17, and 0702825, Rev. 9, SGTL ONP and SGTR EOP Strategies and Bases, Power Point Rev. 2
 0814051, Rev. 3, Simulator Exercise Guide, SGTL and Post Isolation Cooldown 2002
 0814089, Rev. 0, Simulator Exercise Guide, Integrated Plant Training Exercise (Fall 2000)
 0815001, Rev. 16, Simulator Exercise Guide, Complicated SGTR
 0815010, Rev. 8, Simulator Exercise Guide, SGTL, Feedwater Problems, SGTR
 0815018, Rev. 8, Simulator Exercise Guide, SGTR With Complications
 2302003, Rev. 0, Health Physics Training Program, Unit 1 Radiation Monitoring System
 2302004, Rev. 0, Health Physics Training Program, Unit 2 Radiation Monitoring System
 2402008, Rev. 14, Health Physics Continuing Training, Emergency Radiation Team Training

Condition Reports Written Due To This Inspection

CR-03-4474, 3A Fuses were found installed in the Unit 1 PORV control circuits while the Total Equipment Database called for a 10A rated fuse
 CR-03-4358 Steps in Maintenance Procedure 1-M-0037, PORV Maintenance Procedure, performed on April 19 and April 20, 2002 that required an independent verification were signed by the same person.
 CR-03-4475 The step which documents the M&TE post calibration check for a pressure gage was left unsigned in Procedure 0-GMP-26, Relief valve Testing Using the New Test Bench St. Lucie Plant, Rev 3A, performed on August 19, 2003
 CR-03-4507, 1-OSP-03.02B, 1B LPSI Flow Test, Unit 1, Rev 0B, Section 7.1, Step 14 –Data Box on page 9 of 9. The data box has a spot to record valve “Position.” System flows were recorded on 10/06/02 instead of valve position

CR-03-4508,1-MSP-0808, Rev 2, Main Steam Safety Valve Setpoint Surveillance St. Lucie Unit 1. Step 7.2.2.A references Substep 7.2.1.B.2. This substep does not exist.

CR 03-4454, 1-OSP-09.13, Steam Supply to AFW Pump Turbine Check Valve Close Test St. Lucie Unit 1, Section 7.1, Step 20, performed on 04/20/01 was not marked to indicate satisfactory or unsatisfactory completion of the surveillance.

CR 03-4475, 0-GMP-26, Relief valve Testing Using the New Test Bench St. Lucie Plant, Rev 3A, Step 6 "Obtain post calibration check on M&TE..." was not signed has having been completed.

CR-03-4505, Calculation PSC-1-F-J-E-90-0015, Unit 1 Battery Profile did not include the PORVs as a load.

CR-03-4531, the Computer Program or Files Used to Generate the "Projected Steam Generator Leak Rate Calculations" Tables in The Daily Chem Reports Is/are Not Controlled IAW Procedure QI 2-8.

Work Requests Generated Due To This Inspection

33012892, Valve Handle Missing in Low Side Drain Valve Identified During NRC Walkdown
32022072, This WO will Repair/Replace the Drain Valve on LT-9023A Sensing Line Drain

QA Audits and Self Assessments

ENG-SPSL-01-0237, Engineering Self Assessment, November 5, 2001

ENG-SPSL-02-0037, 10CFR50.59 Rule - Engineering Self Assessment, April 9, 2002

QSL-QAP-02-03, QA Program and Management Controls Functional Area Audit, July 30, 2002

QSL-ENG-01-05, Site Engineering Functional Area Audit, July 19, 2001

QSL-MNT-02-07, Maintenance Biennial Functional Area Audit, February 10, 2003

QRNO 03-0153, Project Management Program and Process Implementation, 10/01/03

QRNO 03-009, AFW System Performance Indicators, 2/3/03

QRNO 03-0041, Steam Generator Integrity, 3/26/03

QRNO 03-0077, Temporary Reactor Head Project, 7/9/03

QRNO 03-0093, SG Eddy Current Testing and Tube Plugging, 7/16/03

QRNO 03-0141, RAB Fluids Outside Containment, 9/12/03

QRNO 03-0031, Evaluation of Secondary Chemistry Techniques & Equipment

QRNO 03-0153, QA Program MANAGEMENT Controls, 10/01/03

CRP-LIA-02-003, Operating Experience, 4/26/02

Miscellaneous Documents

0711304, Main, Extraction and Auxiliary Steam System, Rev. 15

0711408, Steam Generators and Feedwater Control System, Rev. 16

0711412, Auxiliary Feedwater System and Auxiliary Feedwater Actuation System, Rev. 18

8770-2336, Auxiliary Feedwater Pump Motor Outline, 9/20/72

8770-3785, Installation, Operation, Maintenance for Bingham pump type MSD (HPSI) Rev. 9

CEN-152, Combustion Engineering Emergency Procedure Guidelines, Steam Generator Tube Rupture Recovery Guideline, Rev. 5.2

COP-07.05, Appendix A, Unit 1 And Unit 2 Low Range Gas Setpoint Calculation, Page 1 of 3, Dated 11/13/03

COP-07.05, Appendix B, Unit 1 And Unit 2 SG Blowdown & CCW Setpoint Calculations, Page 1 of 4, Dated 11/13/03
COP-07.05, Appendix E, Notification Of Set Point Change, Pages 1 and 2 of 4, Dated 11/18/03
FSAR Chapter 8: Electric Power; Section 8.3 Electrical Loads for 125V DC Buses
G404550, Installation and Operation Instructions (TDAFW) Rev. 8
NRC Information Notice 93-56, Weakness in Emergency Operating Procedures Found as a Result of Steam Generator Tube Rupture
PMAI No. PM00-07-043, Work with Training to develop SGTR simulator scenarios and Chemistry personnel will participate to validate implementation of procedure COP-06.05
PMAI No. PM00-07-044, Evaluate COP-06.05, High Activity in a Steam Generator, to ensure available on-site Chemistry resources are adequate to effectively mitigate an SGTR event
PSL-059369, Watt/VAR Transducers for PSL-1 and PSL-2 6.9 KV and 4.16 KV SWGRs and EDGs, 4/20/00
PSL-ENG-SEIS-01-046, St. Lucie Unit 1 Emergency Operating Procedure Setpoint Basis Document, Rev. 1
PSL-ENG-SEIS-01-046, Emergency Operating Procedure Setpoint Basis Document, Rev. 2
PSL-ENG-SEIS-98-022, Uncertainty Calculation Program For EOP And Indication Only Instrument Loops, Rev. 0
PSL-ENG-SENS-99-069, St. Lucie Unit 1 Engineering Evaluation - Identification of Response Times for Credited Operator Actions in Safety Analysis, Rev. 0
St. Lucie 2003 Training Drill, Fourth Quarter, October 29, 2003
St. Lucie Unit 1 Plant Specific Technical Guidelines, Emergency Operating Procedure 1-EOP-04, Steam Generator Tube Rupture, Rev. 20
Technical Specifications Sections 3/4.4.6.2, 6.8.1, 6.8.4
Unit 1 Daily Chemistry Reports, Dated 12/3/2003 and 12/16/2003
Unit 2 Daily Chemistry Reports, Dated 12/3/2003 and 12/16/2003
Updated Final Safety Analysis Report, Section 15.4.4