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

March 7, 2002

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

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INSPECTION REPORT 50-335/01-07, 50-389/01-07

Dear Mr. Stall:

On February 1, 2002, the Nuclear Regulatory Commission (NRC) completed a safety system design and performance capability inspection at your St. Lucie Nuclear Plant. The enclosed report documents the inspection findings which were discussed on February 1, 2002, with Mr. R. West and other members of your staff.

The 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.

No findings of significance were identified during the inspection.

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 Publically 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: Inspection Report 50-335/01-07
and 50-389/01-07 w/Attachment

cc w/encl:
D. E. Jernigan
Site Vice President
St. Lucie Nuclear Plant
Florida Power & Light Company
Electronic Mail Distribution

R. G. West
Plant General Manager
St. Lucie Nuclear Plant
Electronic Mail Distribution

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

Don Mothena, Manager
Nuclear Plant Support Services
Florida Power & Light Company
Electronic Mail Distribution

Mark Dryden
Administrative Support & Special Projects
Florida Power & Light Company
Electronic Mail Distribution

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

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

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

(cc w/encl cont'd - See page 3)

(cc w/encl cont'd)
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
RIDSNRRDIPMLIPB
PUBLIC

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRP	
SIGNATURE	**LENAHAN**	**THOMAS**	**FILLION**	**MAXEY**	**MAYMI**	**RUDISAIL FOR:**	
NAME	LENAHAN	THOMAS	FILLION	MAXEY	MAYMI	NINH	
DATE	3/4/2002	3/5/2002	3/5/2002	3/6/2002	3/4/02	3/7/02	3/ /2002
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: C:\Program Files\Adobe\Acrobat 4.0\PDF Output\stlucie reprt lenahan.wpd

U. S. NUCLEAR REGULATORY COMMISSION
REGION II

Docket Nos:	50-335, 50-389
License Nos.:	DPR-67, NPF-16
Report Nos.:	50-335/01-07, 50-389/01-07
Licensee:	Florida Power & Light Company (FPL)
Facility:	St. Lucie Nuclear Plant, Units 1 & 2
Location:	6351 South Ocean Drive Jensen Beach, FL 34957
Dates:	January 14 - 18, 2002 (Week 1) January 28 - February 1, 2002 (Week 2)
Inspectors:	J. Lenahan, Senior Reactor Inspector (Team Leader) M. Thomas, Senior Reactor Inspector P. Fillion, Reactor Inspector M. Maymi, Reactor Inspector R. Maxey, Reactor Inspector
Approved By:	Charles R. Ogle, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000335-01-07 and 05000389-01-07 on 1/14 -2/1/02, Florida Power and Light Company, St. Lucie Nuclear Plant, Units 1 and 2, safety system design and performance capability.

This inspection was conducted by regional inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://nrr10.nrc.gov/NRR/OVERSIGHT/index.html.

No findings of significance were identified.

Report Details

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems

1R21 Safety System Design and Performance Capability (71111.21)

.1 System Needs

.11 Process Medium

a. Inspection Scope

The team reviewed the refueling water tank (RWT) drawings and volume calculations; the high pressure safety injection (HPSI) system valve setpoint calculations and check valve surveillance documentation; and the HPSI system piping overpressure protection to verify the availability of water for the HPSI system to mitigate a loss of coolant accident (LOCA). The review included the net positive suction head (NPSH) calculations for borated water supplied from the RWT, and for water from the containment sump after swapover. Documents were reviewed for adequacy and consistency with design basis requirements and the Updated Final Safety Analysis Report (UFSAR).

b. Findings

No findings of significance were identified.

.12 Energy Sources

a. Inspection Scope

The team reviewed the overcurrent protection for selected circuits to verify that the overcurrent protection devices would not spuriously interfere with equipment fulfilling its safety function, and secondarily, that protection was provided. Specific overcurrent devices reviewed were the overcurrent relays for the Unit 1 HPSI pumps as well as the magnetic-only molded-case circuit breakers and overload relays for RWT outlet valve 07-1B, reactor sump outlet valve 07-2A, minimum flow isolation valve V3660, and HPSI flow control valve HCV-3617. Breaker set points for the eight Unit 1 and eight Unit 2 HPSI flow control valves were also reviewed. Data sheets for the last calibration of the overcurrent relays for the Unit 1 HPSI pumps were reviewed to verify that the calibration had been performed at the required interval and that excessive drift was not taking place. The team also reviewed the electrical system voltage calculations to determine the worst case design basis calculated voltage at the motor operated valves (MOVs) listed above, and verified that this voltage matched the voltage assumed in the MOV torque calculations.

b. Findings

No findings of significance were identified.

.13 Controls

a. Inspection Scope

The team reviewed the control circuits for the Unit 1 HPSI pumps, RWT outlet valve 07-1A, reactor sump outlet valve 07-2B, minimum flow isolation valve V3659, and HPSI flow control valve HCV-3617 to verify that the pumps would automatically start, and that the valves would automatically move to their accident position upon a safety injection actuation signal (SIAS). The team reviewed uncertainty calculations for the recirculation actuation signal setpoints which swaps the suction source for the HPSI pumps from the RWT to the containment sump during a LOCA. This review was performed to verify that the setpoints ensured sufficient water inventory and prevented loss of required net positive suction head for the HPSI pumps. The timing sequence for opening and closing of valves was also reviewed to verify that valve operation was properly coordinated to affect a smooth swapover. The HPSI flow control valve control circuit was reviewed to verify that operators have the capability to throttle the valves when necessary during a postulated accident. Torque switch control versus limit switch control of the valves was checked to determine appropriate control for the type of valve being operated.

b. Findings

No findings of significance were identified.

.14 Operator Actions

a. Inspection Scope

The team reviewed selected normal, off-normal, and emergency operating procedures (NOP, ONOP, EOP) associated with a LOCA and the HPSI system to verify that the procedures specified operator actions that were consistent with design and licensing requirements during accident conditions. The team discussed selected tasks (e.g., job performance measures and simulator guides) with operations personnel to understand operator actions and important equipment functions. Operator actions were also evaluated for consistency with events described in the UFSAR. The team also performed a walkdown of the main control room instrumentation and alarms to verify that appropriate indications and controls were available and adequate for operators to make the necessary decisions during performance of the specific NOPs, ONOPs and EOPs.

b. Findings

No findings of significance were identified.

.2 Selected System Conditions and Capability

.21 Installed Configuration

a. Inspection Scope

The team performed a field walkdown of accessible equipment related to the HPSI system and its support systems, for both units, to assess material condition, identify degraded equipment, and verify that installed configurations were consistent with design drawings and calculation design inputs. Equipment examined included the RWT, the HPSI pumps, HPSI system piping and valves (including check valves), and RWT instrumentation. The team also examined the overcurrent relays, circuit breakers and overload relays as applicable at the Unit 1 HPSI pump breakers, and the starters for RWT outlet valve 07-1B, reactor sump outlet valve 07-2A, minimum flow isolation valve V3660, and HPSI flow control valve V-3617. The setpoint information and overload relay heater sizes were recorded and compared to the information in the relevant calculations and equipment data base. Device style numbers and manufacturer's application data were also recorded and checked against appropriate documentation.

b. Findings

No findings of significance were identified.

.22 Operation

a. Inspection Scope

The team reviewed corrective maintenance histories, condition reports, and work orders for the HPSI pumps, as well as HPSI system flow and vibration trending data to evaluate the performance of the HPSI system and to identify any trends indicating degrading equipment. Additionally, the team reviewed the vendor manual and the preventive maintenance procedures for the HPSI pumps to determine if proper maintenance practices were established and if the licensee's maintenance program was consistent with the pump manufacturer's recommendations.

b. Findings

No findings of significance were identified.

.23 Design

a. Inspection Scope

The team reviewed the HPSI pump vendor manual, the UFSAR, and the Technical Specifications to verify vendor recommendations and licensing basis requirements had been appropriately translated into the design calculations and safety evaluations. In addition, NPSH calculations and HPSI pump curve data were reviewed to verify that adequate water levels are available in the RWT and containment sump, and that vortexing had been addressed in the calculations. Setpoint calculations which specify

controls for the RWT, containment sump outlet valves, and the HPSI pump discharge valves were also reviewed to verify the calculations were consistent with design requirements and the installed configuration.

Review of the RWT level setpoint calculations included verification that environmental parameters were incorporated when calculating instrument uncertainties. The team also reviewed several equivalency determinations for replacement of components to determine if the determinations were technically adequate. The team also performed an independent calculation to determine the proper ratings of the grounding transformer and resistor for the high-resistance grounded 4160 volt system. The setpoints for the ground fault detection relay in the transformer neutral and at the individual feeder breakers were also reviewed.

b. Findings

No findings of significance were identified.

.24 Testing

a. Inspection Scope

The team reviewed completed test and inspection results to assess the licensee's actions to verify and maintain the safety function, reliability, and availability of selected components in the HPSI system. Test and inspection results were reviewed to verify that: 1) test acceptance criteria and test results appropriately considered differences between testing conditions and design requirements during accident conditions for both full flow and recirculation modes; 2) test and inspection results met established acceptance criteria; and 3) test results considered instrument inaccuracies and differences. Components reviewed included the HPSI pumps, the HPSI MOVs and check valves, sump outlet check valves and the refueling water tank check valves.

The team reviewed the test procedure which controls the testing of the safety-related control circuits for HPSI pumps, the RWT outlet valves, reactor sump outlet valves, minimum flow isolation valves, and the HPSI flow control valves to verify testing requirements specified in the procedures were adequate. The team also reviewed calibration records for the last two calibrations performed on the RWT level transmitters to verify they were calibrated in accordance with setpoint documents and plant procedures, and that out of tolerance conditions were adequately addressed.

b. Findings

No findings of significance were identified.

.3 Inspect Selected Components

.31 Component Degradation

a. Inspection Scope

The team reviewed the preventive maintenance procedure for the DHP type 4160 volt circuit breakers manufactured by Westinghouse Corporation. The team also reviewed the performance history (i.e., the number of failures to trip or close on demand) of the DHP circuit breakers. Records of the last preventive maintenance performed on the Unit 1 HPSI pump breakers were also reviewed.

The team reviewed condition reports, maintenance work orders, and surveillance records to assess the licensee's actions to verify and maintain the safety function, reliability and availability of selected components for the HPSI system. Components included in this review were the HPSI injection check valves, sump outlet check valves, RWT check valves, and the N-header isolation valves. Other documentation reviewed included operating air quality (i.e. moisture, oil, etc) for the N-header isolation valves and completed surveillance procedures to verify that the piping between the containment sump outlet valves and the outlet check valves was maintained full.

b. Findings

No findings of significance were identified.

.32 Modifications/Design Changes

a. Inspection Scope

The team reviewed selected design changes to verify that system and equipment function were appropriately evaluated, maintained, and that they had not reduced system performance or introduced additional risk into the design. The team also reviewed the replacement of engineered safeguards features actuation system (ESFAS) loop power supplies, which generate instrument signals to monitor RWT level. This review was performed to verify that replacement of the power supplies would not affect the availability, capability, or function of ESFAS in the mitigation of a LOCA. Other design changes reviewed included deletion of the HPSI pump low flow alarms, a HPSI pump shaft seal modification, deletion of the pump suction differential pressure strainer alarm, and the change of the normal operating position for an HPSI header cross-connect valve.

b. Findings

No findings of significance were identified.

.33 Equipment Protection

a. Inspection Scope

The team reviewed the provisions for protection of selected system equipment from internal and external flooding. This review verified that the procedures incorporated the requirements specified in the Technical Specifications and the criteria specified in the UFSAR related to flooding. These included procedures for maintaining flood barriers, abnormal operating instructions for responding to site flooding, and operator instructions for identifying and responding to internal flooding of the auxiliary buildings. The team also examined control room instrumentation which alerted operators to potential flooding conditions, and discussed operator response to flooding indications. The team also reviewed the procedures controlling inspection of the reactor containment buildings after completion of outages which are performed to prevent introduction of debris into the reactor building sump or which could impede flow into the sump during the recirculation mode for HPSI operation following a LOCA.

b. Findings

No findings of significance were identified.

.4 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed selected condition reports and respective corrective actions related to the HPSI system and its support systems to evaluate failure trends and assess the adequacy of corrective actions for identified problems. The team reviewed CR 01-0229, which addressed a repeated leak of the 2A2 Safety Injection Tank (SIT). The review focused on the licensee's investigation to determine the root causes for the leak and the planned corrective actions to prevent recurrence of the problem. Additional CRs relating to leakage of the component cooling water (CCW) heat exchangers tubes and the loss of CCW system inventory were also reviewed.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Management Meetings

The lead inspector presented the inspection results to Mr. R. West , and other members of the licensee's staff at an exit meeting on February 1, 2002. The licensee acknowledged the findings presented. Proprietary information is not included in this inspection report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
R. De La Espriella, Site Quality Manager
B. Dunn, Site Engineering Manager
K. Frehafer, Licensing Engineer
M. Moran, Design Engineering Manager
R. Noble, Engineering, Design Basis Group Supervisor
T. Patterson, Licensing Manager
A. Scales, Operations Supervisor
C. Wasik, Mechanical Engineer
R. West, Plant General Manager
C. Wood, Maintenance Manager

Other licensee employees contacted included engineers, operations personnel, and administrative personnel.

NRC
D. Lanyi, Resident Inspector
T. Ross, Senior Resident Inspector

ITEMS OPENED, CLOSED, OR DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Procedures

ADM-20.02, Check Valve Inspection Program, Rev. 0A

ADM-29.01, Inservice Testing (IST) Program for Pumps and Valves, Rev. 9

CG-17, Operation of the Shaw Automatic Dewpoint Meter, Rev. 3

CG-18, Sampling Instrument Air for Particulates, Rev. 2

CG-19, Sampling Instrument Air for Hydrocarbons, Rev. 1

PDMG-002, Predictive Maintenance Thermography Trending, Analysis, & Troubleshooting Guideline, Rev. 3

PDMG-003, Predictive Maintenance Preparation & Analysis of Oil Samples, Rev. 5

PDMG-005, Empath Analysis Guideline, Rev. 0

PDMG-004, Predictive Maintenance Vibration Data Trending/Analysis Program for Rotating Machinery, Rev. 1

QI-5-PSL-1, Preparation, Revision, Review/Approval of Procedures, Rev. 5

0-EMP-52.05, Periodic Maintenance of 4160 Volt Switchgear Breakers, Rev. 3, and Rev. 7

1-EOP-01, Standard Post Trip Actions, Rev. 18

1-EOP-03, Loss Of Coolant Accident, Rev. 22

1-EOP-99, Appendixes/Figures/Tables/Data Sheets, Rev. 33

2-EOP-01, Standard Post Trip Actions, Rev. 21

2-EOP-99, Appendices/Figures/Tables/Data Sheets, Rev. 27

2-GOP-502, Appendix O, Containment Visual Inspection, Rev. 3

2-NOP-03.05, Shutdown Cooling, Rev. 12B

1-M-0018, Mechanical Maintenance Safety Related Preventive Maintenance Program, Pg. 134-141, Rev. 65

1-M-0018P, Mechanical Maintenance Safety Related Preventive Maintenance Program, Rev. 24

2-M-0018P, Mechanical Maintenance Safety Related Preventive Maintenance Program, Rev. 31

1-ONP-24.01, RAB Flooding, Rev. 1

2-ONP-24.01, RAB Flooding, Rev. 1

1-0310020, Component Cooling Water - Normal Operation, Rev. 65

1-0310030, Component Cooling Water - Off Normal Operation, Rev. 35

1-0400050 Operating Procedure Periodic Test of the Engineered Safety Features, Rev. 62A

1-0410030, High Pressure Safety Injection System, Rev. 1

1-0410052, Safety Injection Check Valve Backleakage, Rev. 7B

1-0420050, Containment Spray - Periodic Test, Rev. 53A

2-0420050, Containment Spray and Iodine Removal System - Periodic Test, Rev. 59C

1-14001153H, Refueling Water Storage Tank Level Calibration, Rev. 9

2-14001153G, Engineered Safeguards System Loop Instrumentation Calibration for Refueling Water Storage Tank Level, Rev. 7A

0010120, Conduct of Operations, Rev. 134

0010728, Unit Restart Readiness, Rev. 14, 15, 16, 22, 23, 27, & 28

1400065, Maintenance and Calibration of Plant Instrumentation and Control Equipment, Rev. 25A

Calculations

EC-195 Grounding Calculation Review, Rev 0, dated 12/19/90

EC-200 MOV Thermal Overload Heater Selection, Rev 0, dated 7/1/91

F-MECH-CALC-018, Evaluation of the Calculations Made by FP&L for the Minimum and Maximum Torque Requirements of the Butterfly Motor Operated Valves in the Generic Letter 89-10 Program at St. Lucie Unit 1, Rev. 8

F-PEC-52, Safety Injection System Relief Valve Sizing, dated 5/25/71

L-PEC-018, St. Lucie Unit 2 Safety Injection Tank Relief Valve Sizing Calculation, dated 12/22/75

L-PEC-159, St. Lucie Unit 2 High Pressure Safety Injection Pumps Performance Review, Rev. 0

L-PEC-164, St. Lucie Unit 2 HPSI & LPSI Pump Technical Specification Limiting Condition Values, Rev. 1

NSSS-004, RWT Volume for Post LOCA Heat Removal, Rev. 2

NSSS-012, NPSH for SIS Pumps, Rev. 2

NSSS-038A, DIR-30 SIS Recirculation Flow, Rev. 0

PSL-1EJM-73-010, NPSH Calculation for ECC Pumps, Rev. 0

PSL-1FSM-98-001, LPSI, Containment Spray Pumps NPSH From the Containment Sump St. Lucie Unit 1, Rev. 0

PSL-1FJI-92-011, PSL 1 Refueling Water Tank Level RAS Bistable Setpoint (L-07-2), Rev. 1

PSL-2FJI-92-008, PSL 2 Refueling Water Tank Level Setpoint (Loops L-07-1 & L-07-2), Rev. 1

PSL-BFJI-92-003, St. Lucie Units 1 & 2 Environmental Parameters for Instrument Uncertainty Analysis, Rev. 2

PSL-1FJM-91-017, NRC Generic Letter 89-10, Gate/Globe Valve Motor-Operator Evaluations, Rev. 15

PSL-1FJM-92-020, Generic Letter 89-10 Differential Pressure Calculation for St. Lucie Unit 1 HPSI and AFW Motor Operated Valves, Rev. 4

PSL-1JFM-93-016, Intake Cooling Water (ICW) System Performance, Rev. 1

PSL-2FJM-91-036, High Pressure Safety Injection Pump (HPSI) Pump Heat Load on the Component Cooling Water (CCW) System, Rev. 0

PSL-2FJM-91-048, St. Lucie Unit 2 Generic Letter 89-10 Gate and Globe Valve Required Stem Thrust and Actuator Torque Switch Setting Evaluation, Rev. 18

PSL-2FJM-93-002, Generic Letter 89-10 Differential Pressure Calculation for St. Lucie Unit 2 HPSI and AFW Motor Operated Valves, Rev. 5

PSL-2FJM-93-028, GL 89-10 Differential Pressure Calculation for V3654 and V3656, Rev. 0

Drawings

2998-B-327, Control Wiring Diagram Containment Pressure, Spray Header A, Pressure, Flow, and Refueling Water Tank Level Sh. 293, Rev. 15

2998-B-327, Control Wiring Diagram Containment Pressure, Spray Header B, Pressure, Flow, and Refueling Water Tank Level Sh. 294, Rev. 17

2998-B-327, Control Wiring Diagram Containment Pressure and Refueling Water Tank Level Sh. 295, Rev. 13

2998-B-327, Control Wiring Diagram Containment Pressure, Temperature, and Refueling Water Tank Level Sh. 296, Rev. 22

2998-B-327, Sh 967, Unit 2 Control Wiring Diagram Diesel Generator 2B Start Ckt's Sh.1, Rev. 16

2998-G-892, Reactor Auxiliary Building Riser Diagrams Sheet 1 Plumbing & Drainage, Unit 2, Rev. 8

2998-G-889, Reactor Auxiliary Building Basement Floor Plan Plumbing & Drainage, Unit 2, Rev. 13

2998-4614, Refueling Water Storage Tank - Unit 2 General Arrangement, Rev. 3

8770-04548, Unit 1 Refueling Water Tank 24" Shell Nozzle, Rev. 3

8770-05518, Electrical Schematic SFAS Sh. 1, Rev. 0

8770-13773, Unit 1 RWT Vortex Suppressor, Rev. 0

8770-B-231, Unit 1 Instrument Installation Details Sh. 07-5, Rev. 3

8770-B-231, Unit 1 Instrument Installation Details Sh. 30-19, Rev. 5

8770-B-327 sheet 237, Unit 1 Control Wiring Diagram HP Safety Injection Pump 1A, Rev. 18

8770-B-327 sheet 238, Unit 1 Control Wiring Diagram HP Safety Injection Pump 1B, Rev. 19

8770-B-327 sheet 244, Unit 1 Control Wiring Diagram Minimum Flow Isolation Valve V-3659, Rev. 11

8770-B-327 sheet 262, Unit 1 Control Wiring Diagram High Pressure Safety Injection Flow Control Valve HCV-3617, Rev. 15

8770-B-327, Sh. 293, Control Wiring Diagram Containment Pressure, Spray Header A Pressure and Flow, Refueling Water Tank Level, Rev. 21

8770-B-327, Sh. 294, Control Wiring Diagram Containment Pressure, Spray Header B Pressure and Flow, Refueling Water Tank Level, Rev. 20

8770-B-327, Sh. 295, Control Wiring Diagram Containment Pressure and Refueling Water Tank Level, Rev. 18

8770-B-327, Sh. 296, Control Wiring Diagram Containment Pressure, Temperature, and Refueling Water Tank Level, Rev. 27

8770-B-327, Sh 297, Unit 1 Control Wiring Diagram Refuel Water Tank Valve MV-07-1A, Rev 8

8770-B-327, Sh 299, Unit 1 Control Wiring Diagram Reactor Sump Valve MV-07-2A, Rev 8,

8770-B-327, Sh 362, Unit 1 Control Wiring Diagram Engineered Safeguards Annunciator-R SH.1 RTGB-106, Rev 13, 1/4/99

8770-B-327, Sh 949, Unit 1 Control Wiring Diagram 4160 V SWGR 1A3 Load Shedding Relays, Rev. 13

8770-G-078, Unit 1 Safety Injection System Flow Diagram, Sheet 130A, Rev. 23

8770-G-078, Unit 1 Safety Injection System Flow Diagram, Sheet 130B, Rev. 26

8770-G-078, Unit 1 Safety Injection System Flow Diagram, Sheet 131A, Rev. 26

8770-G-078, Unit 1 Safety Injection System Flow Diagram, Sheet 131B, Rev. 18

8770-G-078, Unit 1 Chemical and Volume Control System Flow Diagram, Sheet 120B, Rev. 15

8770-G-078, Unit 1 Chemical and Volume Control System Flow Diagram, Sheet 121A, Rev. 29

8770-G-078, Unit 1 Chemical and Volume Control System Flow Diagram, Sheet 121B, Rev. 28

8770-G-083, Component Cooling System Flow Diagram, Sheet 1A, Rev. 56

8770-G-083, Unit 1 Component Cooling System Flow Diagram, Sheet 1B, Revision 53

8770-G-083, Unit 1 Component Cooling System Flow Diagram, Sheet 2, Revision 3

8770-G-083, Unit 1 Component Cooling System Flow Diagram, Sheet 4A, Rev. 31

8770-G-085, Instrument Air System, Sheet 2B, Rev. 40

8770-G-085, Instrument Air System, Sheet 2C, Rev. 35

8770-G-088, Unit 1 Containment Spray and Refueling Water Systems Flow Diagram, Sheet 1, Rev. 44

8770-G-088, Unit 1 Containment Spray and Refueling Water Systems Flow Diagram, Sheet 2, Rev. 43

8770-G-229, Miscellaneous Instrument Arrangement, Rev. 14

8770-G-889, Reactor Auxiliary Building Basement Floor Plan Plumbing & Drainage, Unit 1, Rev. 9

8770-4544, Refueling Water Tank General Plan, Rev. 3

Condition Reports (CRs) and Work Orders (WOs)

CR 98-1584, Documentation of Revised 2A & 2B HPSI Pump Inservice Test Acceptance Criteria that Reflect Analysis with Respect to Cycle 2-13 Ground Rules, 10/21/98

CR 98-1984, 2B EDG Voltage Regulator Cable Overheated

CR 99-0080, Fast dead bus transfer while emergency diesel generator in test mode

CR 99-0221, LT-07-7C Leaking

CR 99-0575, Review of IST Scope Applicability and Determination of Leakage Rate Criteria for Potential Leaks Back into the RWT, 06/03/99

CR 99-1389, HCV-3616, HPSI Header Valve, Leak, 08/13/99

CR 99-1625, 1A CCW Flow Dropped to 0 GPM while Performing 1A CCW Pump Code Run, 09/13/99

CR 99-1779, Schedule Conflict with Performance of 1A CCW Heat Exchanger Tube Leak Test at System Pressure, 09/24/99

CR 99-2329, Abnormal noise coming from 2A EDG 2A1 lube oil cooler

CR 99-2545, HCV-1410 N-header Isolation Valve Failed Stroke Time per OP-1-0010125A, 12/30/99

CR 00-0002, Guidance for 2-EOP-99, Appendix O

CR 00-0118, Unit 1 & 2 MV-07-2A/2B Design Basis DP was Determined to be Non-conservative, 03/01/00

CR 00-0444, Loss of Component Cooling Water System Inventory at an Increasing Rate, 03/24/00

CR 00-0821, Check Valve V3143, Did Not Seat Properly, Evaluate Condition and Determine Seal Leakage Criteria, 04/30/00

CR 00-0953, Open Torque Switch for Containment Isolation Valve MV-07-2A was Set Such That Valve Torque at Torque Switch Trip is Less Than the TEDB Minimum Requirement, 06/09/00

CR 00-0972, Unable to Set Torque and Close Limit Switch Settings to Meet TEDB Requirements for Containment Sump Isolation Valve MV-07-2B, 05/12/00

CR 00-1501, 2A HPSI Pump Full Flow Test Surveillance Records Missing, 10/02/00

CR 00-1695, Missed breaker PM PSL-5-034

CR 00-1705, PASSPORT has many errors related to breaker PMs

CR 00-1867, Flow Transmitters Venting for HPSI and CS Systems

CR 01-0229, LPSI A Header Leak

CR 01-0643, Loss of CCW System at an Increasing Rate, 05/08/01

CR 01-1134, 1B EDG Exceeded 10 Second Test Criteria

CR 01-1220, LIS-07-2A Failed Low Due to Faulty Loop Power Supply

CR 01-1396, Repeat - Guidance for 2-EOP-99, Appendix O

CR 01-1714, EDG Radiator Core Damaged

CR 01-2555, MVARS Unstable for 2B EDG

CR 01-2610, Breaker failure PSL-5-125

CR 01-2631, HPSI Pump TDH Requirements Contained in Tech Specs are Non-conservative, 12/02/01

CRs Written During This Inspection

CR 02-0059, Unit 1 HPSI Pump Missed Breaker Surveillance, dated 1/14/02

CR 02-0071, Unit 1 & 2 B-270 Series Drawings that have been Deleted are Referenced in UFSAR Units 1 & 2, dated 11/15/01

CR 02-0099, CR 02-0071 was not Processed in a Timely Manner, dated 1/18/02

CR 02-0175, Potential for Out-of-Phase Transfer of HPSI Pump Motors under SIAS/Degraded Voltage Scenario (Units 1 & 2), dated 1/31/02

CR 02-0177, NRC Concerns Related to Criteria to Establish Breaker Setpoints (Units 1 & 2), dated 1/31/02

CR 02-0178, Incorrect Reference Identified in Unit 1 Calculation PSL-1FJI-92-011, dated 1/31/02

CRN 00048-9999, Correct an Administrative Error in Plant Equipment Database Concerning the Locked Rotor Amp Value for HCV-3617

Calibration Records for the Following Instruments

LT-07-2A	LT-07-2B	LT-07-2C	LT-07-2D
LIS-07-2A	LIS-07-2B	LIS-07-2C	LIS-07-2D
LT07-2A-1	LT07-2B-1	LT07-2C-1	LT07-2D-1
LR-07-2A			

Unit 1 calibrations performed on 4/15/99 and 11/7/00
Unit 2 calibrations performed on 2/1/99 and 8/17/00

Design Changes

PC/M 83158, Low Flow Alarms on HPSI/LPSI Pumps, dated 12/29/83

PC/M 92021, LPSI/HPSI Pump Suction Differential Pressure Strainer Alarm, R-50 Removal, Supplement 0, Rev. 0, dated 03/19/92

PC/M 94104, Deletion of HPSI/LPSI Low Flow Alarms, Supplement 0, Rev. 0, dated 10/26/94

PC/M 94145, Change in the Normal Operating Position of HPSI Header Cross Connect Valve V3653 from Open to Closed and the Modification of the Associated Annunciator Window, Supplement 0, Rev. 0, dated 01/13/95

PC/M 90066, HPSI Pump Shaft Seal Modification, Supplement 0, Rev. 0, dated 2/23/90

PC/M 092-185, ESFAS Power Supplies Replacement

PC/M 95-113, Safety Relief Valve V3417 Setpoint and Blowdown Modification, Unit 1

PC/M 95-115, Safety Relief Valve V3412 Setpoint and Blowdown Modification, Unit 1

PC/M 99-014, Reactor Coolant Pump Mechanical SU Seal Replacement With N-9000 Seal, Units 1 and 2

PC/M 112-285, ESFAS Test Group Assignment Revision

PC/M 440-191M, Administrative Change on HPSI Pump Drawings

PC/M 583-79, ESFAS Design Changes for Reliability Improvement

CRN 98012-8726, RWT Level Transmitter Vent Line Screens

CRN No. 171-191-6435, Replacement of MOV Thermal Overload, dated 7/12/96

CRN No. 171-191-6413, Replacement of MOV Thermal Overload, dated 7/6/96

Temporary System Alteration 2-02-003, Increase time delay from 0.2 seconds to 2.0 seconds for emergency diesel generator breaker closure, dated 1/31/02

Completed Surveillances, Tests, and Calibrations

OP-1-0010125A, Sheets 9A/B, Check Valves Tested During All Modes, Rev. 61, completed 12/03,17/01

OP-1-0010125A, N-Header Isolation Valves HCV-14-8A & HCV-14-9 Surveillance Data Sheets, completed 12/04/01

OP-1-0010125A, Sheets 9A/B, Check Valves Tested During All Modes, Rev. 61, completed 12/03,17/01

OP-1-0010125A, N-Header Isolation Valves HCV-14-8B & HCV-14-10 Surveillance Data Sheets, completed 12/21/01

OP-1-0010125A, St. Lucie Unit 1 Surveillance Data Sheets, Revision 54 (Data Sheet 23, Reactor Cavity 1B Outlet Check Valve V07172), Completed 4/12/2001

OP-1-0010125A, Sheet 23, Valves Tested During Refueling, Rev. 54, completed 04/10/01

OP-1-0010125A, St. Lucie Unit 1 Surveillance Data Sheets, Revision 36A (Data Sheet 23A, Reactor Cavity 1A Outlet Check Valve V07174), Completed 9/22/1999

OP-1-0010125A, St. Lucie Unit 1 Surveillance Data Sheets, Revision 55 (Data Sheet 25, HPSI Header Loop Check Valves V3217, V3227, V3237, V3247 Verification), Completed 4/27/2001

OP-1-0010125A, St. Lucie Unit 1 Surveillance Data Sheets, Revision 55 (Data Sheet 25A, HPSI Header Check Valves V3113, V3123, V3133, V3143 Verification), Completed 4/26/2001

OP-2-0010125A, St. Lucie Unit 2 Surveillance Data Sheets, Revision 58 (Data Sheet 23, Containment Sump Isolation Check Valve V07172), Completed 12/3/2001

OP-2-0010125A, St. Lucie Unit 2 Surveillance Data Sheets, Revision 41 (Data Sheet 23A, Containment Sump Isolation Check Valve V07174), Completed 4/22/2000

OP-2-0010125A, St. Lucie Unit 2 Surveillance Data Sheets, Revision 59 (Data Sheet 25, HPSI Header Loop Check Valves V3217, V3227, V3237, V3247 Verification), Completed 12/20/2001

OP-2-0010125A, St. Lucie Unit 2 Surveillance Data Sheets, Revision 59 (Data Sheet 25A, HPSI Header Loop Check Valves V3258, V3259, V3260, V3261 Verification), Completed 12/20/2001

OP-2-0010125A, Sheet 23, Valves Tested During Refueling Interval, Rev. 54, completed 12/01/01

OP-2-0010125A, Sheets 9A/B, Check Valves Tested During All Modes, Rev. 57, completed 11/07,09/01

2-GOP-502, Appendix O, Containment Visual Inspection, completed 5/18/00

2-NOP-03.12, Filling ECCS Supply Piping, Rev. 4A, completed 12/12,20,27/01, 09/27/01, 11/18/01

1-OSP-03.01A,1A HPSI Pump Safeguards Full Flow Test, Rev. 2, completed 04/10/01

1-OSP-03.01B, 1B HPSI Pump Safeguards Full Flow Test, Rev. 2, completed 04/10/01

2-OSP-03.01A, 2A HPSI Pump Safeguards Full Flow Test, Rev. 1, completed 12/01/01

2-OSP-03.01B, 2B HPSI Pump Safeguards Full Flow Test, Rev. 2, completed 12/01/01

1-0410050, HPSI/LPSI Periodic Test, Rev. 68A, completed 12/03,17/01

1-0420050, Containment Spray - Periodic Test, Revision 53 (Unit 1 RWT Discharge Check Valves V07119 and V07120 Reverse Flow Test), completed 4/24/2001

2-0410050, HPSI/LPSI Periodic Test, Rev. 46B, completed 11/07, 09/01

2-0420050, Containment Spray and Iodine Removal System - Periodic Test, Revision 59C, (Unit 2 RWT Outlet Check Valves V07119 and V07120 Reverse Flow Test) completed 12/15/2001

0010728, Unit Restart Readiness (Containment Closeout Inspections) completed 9/20/95, 10/6/95, 10/27/95, 1/18/98, 2/23/98, 8/29/99, and 10/15/99

Completed Work Orders

26033158-01, HCV-14-8A Actuator Overhaul, 11/18/97

26033157-01, HCV-14-8B Actuator Overhaul, 12/21/97

26033156-01, HCV-14- 9 Actuator Overhaul, 11/18/97

26033155-01, HCV-14-10 Actuator Overhaul, 12/21/97

29027453-01, HCV-14-10 Slow Stroke Time, Repair/Replace, 01/27/00

30001271-01 & 30001051-01, HCV-14-10 Failed Stroke Time, 04/14/01

30012563-01, Replace Check Valve V3413 per CR 00-0821, 12/06/01

30020657 01, V3804 Outlet Leak Testing

31008340 01, Level Indicating Switch for Refueling Water Tank Level

31008340 02, 45 DC Power Supply for LT-07-2

31002061, Check Valve V07119 IST Inspection, Completed 12/4/2001

31006618-01 & 30016682-01, Inspection of the Instrument Air Dryer 1A, 06/14/01 & 12/08/00

31012242-01 & 30021579-01, Inspection of the Instrument Air Dryer 1B, 09/18/01 & 02/02/01

96032854-01, Boric Acid Buildup on High Pressure Safety Injection Pump 2B, 05/03/97
96033081-01, Repair Leak of High Pressure Safety Injection Pump 2, 04/29/97

97008215-01, Replace Outboard Mechanical Seal on High Pressure Safety Injection Pump 2B, 05/07/97

RWO 99-0012 Complete periodic maintenance on 1A3 4160 V bus protective relaying equipment, completed 9/23/99

RWO 01-0007 Complete periodic maintenance on 1B3 4160 V bus protective relaying equipment, completed 4/18/01

ER/PWO 67/5776, 36-month breaker PM on PSL-5-039 (1B3-5), completed 10/25/00

ER/PWO 67/6023, 36-month breaker PM on PSL-5-106 (1A3-1), completed 11/24/01

System Descriptions

0711205, Chemical and Volume Control System, Rev. 12

0711207, Emergency Core Cooling and Containment Heat Removal Systems, Rev. 20

0711209, Component Cooling Water System, Rev. 7

Design Basis Documents

DBD-HPSI-1, High Pressure Safety Injection System, Unit 1, Rev. 1

DBD-HPSI-2, High Pressure Safety Injection System, Unit 2, Rev. 1

Updated Final Safety Analysis Report (UFSAR)

Section 6.3, Emergency Core Cooling System

Section 7.3.1.1.2, Recirculation Actuation Signal

Section 9.2.1, Intake Cooling Water System

Section 9.2.2, Component Cooling Water System

Section 9.3.4, Chemical and Volume Control System

Section 15.3.1 Loss of Reactor Coolant From Small Ruptured Pipes or From Cracks in Large Pipes Which Actuates Emergency Core Cooling System

Table 6.2-9A, NPSH Calculations for ECCS Pumps for Unit 1

Table 6.3-18, HPSI Pump NPSH Data for Unit 2

Technical Specifications

3/4.3.2, Engineered Safety Feature Actuation System Instrumentation

3/4.4.5.2, Emergency Core Cooling System Surveillance Requirement

3/4.4.6.2, St. Lucie Unit 1 Reactor Coolant System Leakage

Miscellaneous Documents

Generic Letter 95-07 - 180 Day Response, FP&L Letter L-96-31 to the NRC, dated 2/13/96

JPM-0821022T/R10, Job Performance Measure (Unit 1 Control Room) Restore CCW to the RCPs - Unit 1, Rev. 10

JPM-0821115R05, Job Performance Measure (Control Room Unit 2/Simulator), Establish Alternate Charging Flow Path Through "A" HPSI Header - Unit, Rev. 5

8770-3785, High Pressure Safety Injection Pumps Instruction Manual, Rev. 9

2998-6738, High Pressure Safety Injection Pumps Instruction Manual, Rev. 4

JPN-PSL-SEMJ-90-30, Safety Evaluation for Fully Open HPSI System Header Isolation Valves, Rev. 0

Flow & Vibration Testing Results for HPSI Pumps 1A, 1B, 2A & 2B for Full Flow Testing, 1990-2001

Flow & Vibration Testing Results for HPSI Pumps 1A, 1B, 2A & 2B for Recirculation Flow Testing, 1998-2001

Instrument Air Sampling Results for Units 1 & 2 for Dewpoint, Particulate, & Oil Checks, Dates 07/01/01-01/16/02

IC-3.17, Instrument Setpoint Methodology, Rev. 7

Total Equipment Data Base - various sheets relevant to the electrical systems

SSC Performance Indicator for System 52 - 4.16 kV Switchgear and Breakers, dated 1/10/02

Quality Control Inspection Report for refurbishment of 4160 V DHP breaker PSL-5-106, dated 1/21/01

Memorandum from Roger Kulavich to Doug Huey on the subject of Operability Inspection of Breaker PSL-5-014