UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8931

April 30, 2001

Florida Power and Light Company
ATTN: Mr. T. F. Plunkett
President - Nuclear Division
P. O. Box 14000
Juno Beach, FL 33408-0420

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INSPECTION REPORT
50-335/00-08, 50-389/00-08

Dear Mr. Plunkett:

On March 31, 2001, the NRC completed an inspection at your St. Lucie Units 1 and 2. The enclosed report documents the inspection findings which were discussed on April 3, 2001, with Mr. R. Kundulkar and other members of your staff.

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

Based on the results of this inspection, the inspectors identified two issues of very low safety significance (Green). The issues were determined to involve violations of NRC requirements. However, because of their very low safety significance and because they have been entered in your corrective action program, the NRC is treating these issues as non-cited violations in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny these non-cited violations, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie facility.

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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

Leonard D. Wert, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 50-335/00-08, 50-389/00-08
Attachment 1: NRC's Revised Reactor Oversight Process
Attachment 2: List of Documents Reviewed

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-335, 50-389
License Nos:	DPR-67, NPF-16
Report No:	50-335/00-08, 50-389/00-08
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 31, 2000- March 31, 2001
Inspectors:	T. Ross, Senior Resident Inspector D. Lanyi, Resident Inspector J. Kreh, Emergency Preparedness Inspector (Sections 1EP2- 1EP5, and 4OA1) R. Gibbs, Senior Reactor Inspector (Section 1R02) G. Kuzo, Senior Radiation Specialist (Sections 2OS1-2OS3, 2PS1, and 2PS3) B. Tobin, Senior Security Specialist (Section 3PP1)
Approved by:	L. Wert, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335-00-08, IR 05000389-00-08 on 12/31/2000-03/31/2001, Florida Power & Light Company, St. Lucie Nuclear Plant, Units 1 & 2. Two findings in the area of Operability Evaluations.

This inspection was conducted by resident inspectors and several Region II inspectors; an emergency preparedness inspector, a senior reactor inspector, a senior radiation specialist, and a senior security specialist. The inspectors identified two green findings, which were non-cited violations. The significance of the findings are indicated by their color (Green) which was determined using IMC 609 "Significance Determination Process" (see Attachment 1; NRC's Revised Reactor Oversight Process).

Inspector Identified Findings

Cornerstone: Containment Barriers

- Green. A Non-Cited Violation of Technical Specifications (TS) 3.7.7 was identified addressing inadequate surveillance testing and operational controls for the Unit 2 control room emergency cleanup system.

  This finding was of very low safety significance because control room operator dose would not have exceeded 10CFR100 limits if a design basis event had occurred, and subsequent surveillance testing demonstrated that the system had been functionally capable of fulfilling its intended safety purpose. (Section 1R15.1)

- Green. A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, Corrective Action, was identified for failing to promptly identify and correct a condition adverse to quality affecting the Unit 2 control room emergency cleanup system.

  This finding was of very low safety significance because the condition adverse to quality was of very low safety significance. Control room operator dose would not have exceeded 10CFR100 limits if a design basis event had occurred and the system had been functionally capable of fulfilling its intended safety purpose. (Section 1R15.2).

Report Details

Summary of Plant Status:

Unit 1 operated at essentially full power for almost the entire report period. Power was reduced to approximately 68% at the end of the period for main steam safety valve testing just prior to entering a refueling outage on April 2, 2001.

Unit 2 operated at full power until March 14, when it experienced an automatic reactor trip due to loss of both control element assembly motor generator sets. The unit was returned to full power operation on March 19 and remained there for the rest of the report period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity (Reactor - R), and Emergency Preparedness (EP)

1R02 Evaluation of Changes, Tests, or Experiments

a. Inspection Scope

This portion of the inspection was conducted to review implementation of the licensee's program for 10 CFR 50.59, Evaluations of Changes, Tests, or Experiments. The inspection was conducted by review of the samples listed in the attachment of completed safety evaluations to verify facility changes were made according to licensee procedures and to verify that the licensee appropriately considered conditions under which changes may be made without NRC approval. The sample selected included evaluations from all three Reactor Safety cornerstones, and included the most risk significant items from a list of evaluations provided by the licensee. The sample also included evaluations from all site groups performing evaluations, and consisted of evaluations of plant modifications, procedure revisions, changes to the Updated Final Safety Assessment Report (UFSAR), tests, and non-routine operating configurations. The sample included a total of 23 evaluations, ten of which were screened out as not requiring an evaluation.

In addition, the inspector reviewed the corrective actions for licensee identified problems with the 10 CFR 50.59 program, and additionally reviewed a recently completed Nuclear Assurance Audit of the program.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignment

a. Inspection Scope

The inspectors conducted partial alignment verifications of the safety related systems listed below to evaluate operability of the in-service train, while its redundant train was inoperable or out of service. These equipment alignment verifications included system

walkdowns using plant lineup procedures, operating procedures, piping and instrumentation drawings, and/or clearance tag orders. The inspectors also reviewed applicable logs and interviewed operators regarding their knowledge of system conditions and configuration.

- Unit 1A and Unit 1B Auxiliary Feedwater (AFW) System
- Unit 1B Emergency Diesel Generator (EDG)
- Unit 2B EDG

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors conducted tours of the fire areas listed below that are important to reactor safety and part of AP-1800022, Fire Protection Plan. The inspectors evaluated numerous aspects, which included licensee control of transient combustibles and ignition sources during maintenance activities; the material condition, operational status, and operational lineup of fire protection systems, equipment and features; compensatory measures; and the condition of fire barriers.

- 1A EDG room during hot work
- Unit 1 EDG building
- Unit 1 Component Cooling Water (CCW) Surge Tank and Air Conditioning rooms
- 1C AFW maintenance area
- Unit 1 AFW and Steam Trestle area

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspector observed selected aspects of the licensee's activities associated with the cleaning, eddy current testing, inspection, and tube plugging of the 2A and 2B CCW heat exchangers. The inspector also interviewed responsible system engineering personnel regarding CCW heat exchanger performance attributes, including tube plugging limits, and post-maintenance testing results. The inspector also reviewed the safety evaluation and performance curves of OP 2-0640020, Intake Cooling Water System Operation, and verified that both heat exchangers were operating within these curves.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification Program

a. Inspection Scope

During the week of March 6, inspectors observed and assessed simulator training for operators which included a Steam Generator tube rupture, and routine plant cooldowns and startups in preparation for the Unit 1 refueling outage. The inspectors specifically assessed the following areas:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of normal operating procedures, annunciator response procedures and emergency operating procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by the shift supervisor, including ability to identify and implement appropriate TS actions such as reporting and emergency plan actions and notifications
- Effectiveness of the post training critique

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors selected a sample of identified equipment performance problems from the systems listed below, and assessed the effectiveness of licensee efforts in accordance with ADM-17.08, Implementation of 10 CFR 50.65, The Maintenance Rule. Reviews focused on maintenance rule scoping in accordance with 10 CFR 50.65 and characterization of failed systems or components. Additionally, the risk significance classifications, the (a)(2) classifications, and the appropriateness of performance criteria for systems or components classified as (a)(2), or goals and corrective actions for those classified as (a)(1) were also reviewed. The inspectors also verified that equipment problems were being identified at the appropriate level, entered into the corrective action program and being dispositioned appropriately.

• CR 00-0357, 0308, 0276, and 0287	Unit 1 AFW System
• CR 00-1014,1045,01-0332	Unit 2 Power Operated Relief Valves
• CR 01-0064	Units 1 and 2 Engineered Safety Feature Actuation System (ESFAS), AFW Actuation System, and Reactor Protection System
• CR 01-0033	Unit 2 Reactor Trip Circuit Breakers

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed and witnessed the following emergent and planned maintenance tasks to evaluate the effectiveness of licensee scheduling, and management of online risk according to ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors also verified that appropriate contingencies were taken to reduce risk and minimize unavailability, and that emergent work activities were properly planned per ADM-10.03, Work Week Management. The inspectors also confirmed that problems with maintenance, risk assessments and emergent work were identified and appropriately addressed as part of the corrective action program.

- 1C AFW Pump Critical Maintenance Management (CMM)
- Unit 2 Control Element Assembly (CEA) Troubleshooting with 1A EDG out of service
- 2B CCW CMM
- Unit 2 loss of load test while containment spray system out of service
- Unit 2 CEA equipment problems during scheduled 2B EDG surveillance test
- 1A EDG CMM using extended allowed outage time

b. Findings

No findings of significance identified.

1R14 Personnel Performance During Non-routine Plant Evolutions and Events

a. Inspection Scope

The inspectors witnessed and/or reviewed operator performance in coping with the four non-routine plant evolutions listed below. The inspectors verified that Operations personnel performed in accordance with applicable procedures, training, and management expectations. The inspectors examined operator logs, strip charts, and computer, interviewed responsible operators and their supervision, and evaluated operator actions against applicable plant procedures and TS.

- Minor Unit 2 overpower excursion event due to gland seal steam pressure regulator failure;
- Unit 2 CEA manipulations during moderator temperature coefficient verification;
- Transfer of Unit 2 CEA subgroup from the hold bus following repairs; and,
- Unit 2 automatic reactor trip and subsequent restart.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

.1 Operability Documentation

a. Inspection Scope

The inspectors reviewed the interim disposition and operability assessment of the CRs listed below to ensure that operability was properly justified and the system, structure, or component (SSC) remained available, such that no unrecognized increase in risk occurred. Reviews of the UFSAR and applicable supporting documents and procedures were performed to assess the adequacy of the interim CR disposition. As necessary, the inspectors also interviewed responsible personnel and supervision from Engineering, Operations and/or Maintenance. Additionally, with regard to CRs 00-2076 and 01-0449, an inspector witnessed troubleshooting efforts, reviewed past surveillance tests and the CR final engineering dispositions, and performed walk throughs using applicable operating procedures with shift operating crews.

The inspectors also reviewed newly initiated CRs on a routine basis to ensure operability issues were being identified at an appropriate threshold and properly addressed by the corrective action program.

- CR 01-0047 2C Charging Pump failed to start
- CR 00-2076 & 01-0449 Unit 2 Control Room Emergency Cleanup System (CRECS) differential pressure indicator reading a positive pressure
- CR 01-0143 1C AFW Pump Trip/Throttle Valve excessive cycling
- CR 01-0281 Unit 1 Feedwater pressure transmitter (PT-09-10A) output signal too low
- CR 01-0342 Unit 2 ESFAS power supplies seismic qualification
- CR 01-0414 1A2 EDG radiator corrosion
- CR 01-0328 1A Intake Cooling Water Pump oil leak

b. Findings

Green. The inspectors identified a non-cited violation (NCV) of TS 3.7.7 regarding inadequate surveillance testing and operational controls of the Unit 2 CRECS.

On December 16, 2000, during testing of the Unit 2 CRECS in according with 2-OSP-25.01, Control Room Pressure Periodic Test, the licensee identified that control room differential pressure instruments PDIS25-23A and B were reading a positive pressure of approximately .1 to .15 inches water even when the control room atmosphere was equalized with the outside environment. CR 00-2076 was initiated to address the issue. On December 19, the licensee determined in their initial operability assessment that the Unit 2 CRECS “is operable and is capable of performing its intended function.”

After reviewing the interim disposition of CR 00-2076, an NRC inspector questioned the acceptability of past surveillance tests and whether the system was operable during a design basis accident (DBA) event. CR 01-0049 was initiated to further investigate system operability issues. In the final disposition and operability assessment of CRs 00-2076 and 01-0049, the licensee concluded that the Unit 2 CRECS was functionally operable and existing procedures were capable of aligning the system to pressurize the control room. The inspector continued to question system operability. The inspector was specifically concerned that the inaccurate PDIS indications, along with the existing procedural guidance, would result in the operators not taking actions necessary to ensure that a positive pressure was maintained in the control room during accident conditions.

On January 31, 2001, after additional review, the licensee determined that the PDIS indications, with existing EOPs and ONPs, could have led the operators into not pressurizing the control room during accident conditions. Consequently, the Unit 2 CRECS would not have performed its intended safety function. The licensee promptly notified the NRC pursuant to 10CFR50.72 that this condition could have potentially caused control room operators to receive a dose in excess of general design criteria (GDC) 19 limits during an accident.

This issue had a credible impact on safety since this condition could have potentially resulted in control room operator doses in excess of 10CFR50 GDC 19 limits. However, the licensee's analysis concluded that total operator dose would not have exceeded 10CFR100 limits and as such the issue would not have a significant adverse impact on public health and safety. The inspectors concluded that this degraded condition was of very low safety significance because a subsequent surveillance test demonstrated the Unit 2 CRECS had remained functionally capable of performing its intended safety purpose. Additionally, if control room radiological surveys alerted personnel of higher than expected dose rates during an DBA, the CRECS could have been operated in a manner to increase the control room differential pressure and thus reduce operator dose. The significance of this issue was characterized as "Green" by the Phase 1 screening worksheet for "Containment Barriers" of the significance determination process detailed in Inspection Manual Chapter 609, Appendix A, Attachment 1.

Despite extensive troubleshooting and evaluation, the licensee was unable to determine the precise cause of the Unit 2 PDIS positive pressure offset, or how long it existed. Past surveillance test data indicated that this condition has existed since 1998. TS 4.7.7.e.3, required that the licensee demonstrate that the Unit 2 CRECS can maintain control room pressure greater than 1/8 inch every 18 months. Prior to December 17, 2000, the last acceptable surveillance test appears to have been completed on November 8, 1997. Technical Specifications 3.7.7 requires two independent operable trains of CRECS during all modes of operation. The licensee's failure to adequately test the Unit 2 CRECS, and the adverse impact of the PDIS equipment problem on the operators' ability to fulfill the CRECS pressurization safety function constituted a violation of TS 3.7.7. Because the violation of TS 3.7.7 is of very low safety significance and has been entered into the licensee's corrective action program (CRs 00-2076, 01-0049, and 01-125), this finding is considered an NCV in accordance with Section VI.A.1 of the NRC Enforcement Policy. The finding is identified as NCV 50-389/00-08-01, Failure To Ensure Fulfillment Of The Control Room Pressurization Safety Function.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspector reviewed licensee actions to disposition and correct a condition adverse to quality associated with the Unit 2 control room emergency cleanup system. The inspector evaluated the actions against the requirements of 10CFR, Appendix B, Criterion XVI, Corrective Action.

b. Findings

Green. A Non-Cited Violation of 10CFR50, Appendix B, Criterion XVI, Corrective Action, was identified for failing to promptly identify and correct a condition adverse to quality affecting the Unit 2 control room emergency cleanup system.

The licensee did not recognize that inaccurate control room indications for control room differential pressure would result in the system not being adequately tested (Section 1R15.1 contains additional details). After the problem was identified on December 16, 2000, the licensee's dispositions of CRs 00-2076 and 01-0449 did not adequately evaluate CRECS operability implications.

The licensee did not translate interim corrective actions, developed to perform an acceptable surveillance test (completed on December 17, 2000), into operational guidance that would ensure the CRECS was operated properly during an event. It was not until January 16, 2001, after prompting by an NRC inspector, that the Operations Supervisor issued night orders to the operating crews. The licensee's failure to recognize the impact of the inaccurate instrumentation and the subsequent delay in establishing guidance to the operators had a credible impact on safety since the inoperability of the system was extended. The safety significance of inadequate corrective actions to correct a condition adverse to quality is related to the significance of the adverse condition. The safety significance of the system inoperability and inadequate testing is described in Section 1R15.1 and was characterized as "Green" by the Phase 1 screening worksheet for "Containment Barriers" in the Significant Determination Process.

Criterion XVI, Corrective Action, of 10CFR50, Appendix B, states in part, that measures shall be established to assure that conditions adverse to quality are promptly identified and corrected. The failure to identify a significant condition adverse to quality and take prompt corrective actions constituted a violation of 10CFR50, Appendix B, Criterion XVI, Corrective Action. Because the violation is of very low safety significance and has been entered into the licensee's corrective action program (CR 01-125), this finding is considered an NCV in accordance with Section VI.A.1 of the NRC Enforcement Policy. The finding is identified as NCV 50-389/00-08-02, Failure To Identify And Promptly Correct Operability Issues Associated With CRECS.

1R16 Operator Workarounds

a. Inspection Scope

The inspectors reviewed the operator workaround (OWA) associated with the Unit 2 Main Control Room differential pressure transmitters, to evaluate its risk significance

from an individual perspective and its cumulative effect with other OWAs. The impact of this OWA upon the operators' abilities to use affected abnormal and emergency operating procedures was also evaluated. Furthermore, responsible operators were interviewed to assess their knowledge and familiarity with applicable compensatory instructions.

The inspectors also performed a semi-annual evaluation of the licensee's OWA program. This included reviewing Operations Policy OPS-510, Operator Workarounds, and evaluating all outstanding operator workarounds (about 25) to ensure that there was not any inadvertent or unforseen impact on any system's reliability or availability. Additionally, the cumulative effects of the OWAs were reviewed to ensure there was no potential increase in an initiating event frequency or adverse affect upon multiple mitigating systems. Each OWA was reviewed with the applicable unit's Assistant Nuclear Plant Supervisor, Reactor Operator, and/or Non-licensed Operator to determine if the OWAs could increase the probability of system misoperation or hinder Operation's ability to respond to a transient or accident in a timely or correct manner. Furthermore, the inspector reviewed the quarterly meeting minutes of the OWA team responsible for periodically reviewing individual OWA status and repair priority, and assessing overall risk.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors evaluated implementation of Plant Change/Modification (PC/M) 99-117 that replaced the Unit 2 Emergency Core Cooling System suction piping to verify the system's design had not been degraded, and the modification had not placed the plant in an unsafe condition. The inspectors verified numerous aspects of the PC/M, such as: materials and replacement components were compatible with physical interfaces; replacement components were seismically qualified; code and safety classification of replacement system, structures, and components were consistent with design bases; design assumptions were appropriate; post-modification testing established operability; any failure modes introduced by the modification were bounded by existing analyses; appropriate procedures or procedure changes were completed; and the as-built configuration accurately reflected the design documentation.

The inspectors also reviewed additional information as necessary such as applicable sections of the UFSAR, the living UFSAR, supporting analyses, TS, drawings and procedures.

b. Findings

No findings of significance were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed post maintenance test (PMT) procedures and witnessed testing activities for selected risk significant mitigating systems to determine the following: (1) Effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) Testing was adequate for the maintenance performed; (3) Acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) Test instrumentation had current calibrations, range and accuracy consistent with the application; (5) Tests were performed as written with applicable prerequisites satisfied; (6) Jumpers were installed or leads lifted were properly controlled; (7) Test equipment was removed following testing; and, (8) Equipment was returned to the status required to perform its safety function. The inspectors also verified that selected problems associated with PMTs were identified and appropriately resolved as part of the corrective action program. Post maintenance testing for the following were witnessed and reviewed:

- Various WOs 1C AFW pump
- WO 29010093 2B EDG watt recorder
- WO 31005021 Unit 2 CEA circuit
- WO 30002955 2A EDG pressure switch and watt recorder

b. Findings

No findings of significance identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors reviewed and witnessed the conduct of surveillance testing in accordance with normal operating procedures (OP). Applicable test data was reviewed to verify whether they met TS, UFSAR, and licensee procedure requirements. Also, the inspectors verified that the testing effectively demonstrated that the systems were operationally ready, capable of performing their intended safety functions, and that identified problems were entered into the corrective action program for resolution.

- OP 2-2200050A 2A EDG semi-annual fast start
- OP 2-0110050 Unit 2 CEA periodic exercise
- OP 1-2200050A 1A EDG semi-annual fast start

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed Temporary System Alteration (TSA) 2-01-001 which rewired a redundant hot leg thermocouple from the B channel of the Qualified Safety Parameter Display System to the B Reactor Protection System. The inspectors evaluated this temporary modification and associated 10 CFR 50.59 screening against the system design basis documentation, and verified that the modification did not adversely affect system operability or availability. Additionally, the inspectors verified that the installation was consistent with applicable modification documents and conducted with adequate configuration control.

b. Findings

No findings of significance were identified.

1EP2 Alert and Notification System Testing

a. Inspection Scope

The inspector reviewed alert and notification system (ANS) test commitments as contained in Section 5.2.8 of the Radiological Emergency Plan (REP), as well as various ANS design drawings/documents, and evaluated the adequacy of the testing program. Reviews were conducted of the ANS (sirens) testing results for calendar year 2000 and related documentation in the corrective action program (see also Section 4OA1.2, below).

b. Findings

No findings of significance were identified.

1EP3 Emergency Response Organization Augmentation

a. Inspection Scope

The inspector reviewed the design of the emergency response organization (ERO) augmentation system and the maintenance of the licensee's capability to staff emergency response facilities within stated timeliness goals. Records of the quarterly ERO augmentation drills conducted during 2000 were reviewed. These were unannounced, off-hour communications drills. Follow-up activities for problems identified through augmentation testing were reviewed to determine whether appropriate corrective actions had been implemented.

b. Findings

No findings of significance were identified.

1EP4 Emergency Action Level and Emergency Plan Changes

a. Inspection Scope

The inspector selectively reviewed changes to the Radiological Emergency Plan (REP), as promulgated in Revisions 37 and 38, against the requirements of 10 CFR 50.54(q) to determine whether any of those changes decreased REP effectiveness. Both revisions included modifications to the emergency action levels (EALs), some of which in Revision 38 were major changes that had been submitted to the NRC for approval prior to implementation. The inspector verified that the EAL modifications in Revisions 37 and 38 were reviewed with, and agreed upon by, State and local officials prior to implementation, as required by section IV.B of Appendix E to 10 CFR Part 50.

b. Findings

No findings of significance were identified.

1EP5 Correction of Emergency Preparedness Weaknesses and Deficiencies

a. Inspection Scope

The inspector evaluated the efficacy of licensee programs that addressed weaknesses and deficiencies in emergency preparedness. Documents reviewed included CRs, self-assessment reports, audit report QSL-EP-00-02, and critique reports for drills on January 26, September 20, and November 7, 2000.

b. Findings

No findings of significance were identified.

2. RADIATION SAFETY

Cornerstones: Occupational Radiation Safety (OS) and Public Radiation Safety (PS)

2OS1 Access Control to Radiologically Significant Areas

a. Inspection Scope

Licensee controls for selected tasks associated with areas potentially having high dose rates, steep dose rate gradients, and changing radiological conditions during the upcoming Unit 1 Refueling Outage (RFO) 17 were discussed and evaluated. Specifically, Electronic Alarming Dosimeter (EAD) set-points, multi-badging requirements, and administrative controls were reviewed and discussed. Licensee controls for selected tasks within the Unit 1 reactor control building (RCB) were evaluated based on RWP Request Forms, RWP Worksheet details, previous radiation surveys, and documented maximum accumulative EAD dose and dose rate data identified for previous Unit 1 RFO tasks. The reviewed tasks included steam generator activities, removal/installation of insulation, scaffolding activities, and Health Physics (HP) coverage.

Licensee guidance and activities were evaluated against 10 CFR Part 20 and the facility TS requirements, UFSAR details, and the following procedural guidance:

- Health Physics Procedure (HPP) -30, Personnel Monitoring,
- HPP-112. Multibadging,
- Radiation Protection Manual

b. Findings

No findings of significance were identified.

2OS2 "As Low As Reasonably Achievable" Program Planning and Controls

a. Inspection Scope

Licensee "As Low As Reasonably Achievable" (ALARA) activities in preparation for the upcoming Unit 1 RFO 17 were evaluated. General ALARA program initiatives, including shutdown chemistry, purification clean-up plan, and clean-up resins were reviewed. Reactor coolant piping average dose rate trend data for both Unit 1 and Unit 2 were reviewed and discussed. The inspectors reviewed and discussed ALARA goals for calender year (CY) 2001 and the upcoming Unit 1 RFO 17, and verified incorporation of previous lessons learned for the following tasks:

- RWP 01-1030 Unit 1 Reactor Control Building (RCB) All Elevations and Areas, Install/Remove Scaffolding
- RWP 01-1405 Unit 1 RCB, All Elevations; In-service Inspection Support: Remove, Install Insulation
- RWP 01-1309 Unit 1 RCB All Elevations and Areas: Numanco: Decon, Shielding, and Trashout
- RWP 01-1006 Unit 1 RCB 62 Foot (') Elevation & Upper Reactor Cavity; Install/Remove Stud Tensioners, Detension/ Tension Studs, Install Stud Hole Plugs, and Alignment Pins
- RWP 01-1303 Unit 1, RCB 23' and 18' Elevations, HP Job Coverage

Reviewed guidance documents and their implementation were evaluated against the facility's CY 2001 ALARA goals, UFSAR, TS, and 10 CFR Part 20 requirements.

b. Findings

No findings of significance were identified.

2OS3 Radiation Monitoring Instrumentation

a. Inspection Scope

Operability and reliability of the Unit 1 and Unit 2 Post Accident Sampling Systems (PASS) were evaluated. The inspectors observed equipment installation and material condition, and reviewed recent work orders and current status for Unit 1 and Unit 2 PASS equipment. Identified equipment modifications, operability issues and corrective actions were discussed. Conduct of preventative maintenance within the past 36

months was verified. Results of the March 2001 operability test results were discussed and reviewed. System engineer and chemistry staff knowledge of PASS system operations was evaluated. Current on-going training provided to chemistry staff was verified.

Program activities were evaluated against applicable sections of the UFSAR, TS, Regulatory Guide 1.97, Instrumentation for Light-Water-Cooled Nuclear Power Plants To Assess Plant and Environs Conditions During and Following an Accident, NUREG 0737, Clarification of Three Mile Island (TMI) Action Plan Requirements, Item II.B.3, Post Accident Sampling, and the following Chemistry Operating Procedures (COP):

- 1 COP-06.02 Operation of the Unit 1 Post Accident Sampling System (PASS) during Accident Conditions
- 2 COP-06.02 Operation of the Unit 2 PASS during Accident Conditions
- 1-COP-06.09 Performing and operability test on the Unit 1 PASS
- 2-COP-07.02 Performing and operability test on the Unit 2 PASS
- 2-COP-07.04 Performing a Fill and Vent on the Unit 2 PASS

b. Findings

No findings of significance were identified.

2PS1 Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems

.1 Radiation Monitoring Systems

a. Inspection Scope

Operability and reliability of the following process Radiation Monitoring System (RMS) equipment was evaluated and discussed. CY 2001 year-to-date and CY 2000 maintenance preventable functional failures and associated licensee actions for selected process monitors were reviewed and discussed. The inspectors directly observed equipment material condition and verified sample line configuration against applicable instrument installation drawing details for the Unit 1 and Unit 2 Plant Vent and Fuel Handling Building effluent monitoring systems. The review included the following RMS equipment/systems:

- Unit 1 RSC-26-1 Plant Vent Special Particulate, Iodine, Noble Gas (SPING)
- Unit 1 RSC-26-4 Fuel Handling Building SPING
- Unit 1 RSC-26-2 Emergency Core Cooling System (ECCS) “A” SPING
- Unit 1 RSC-26-3 ECCS “B” SPING
- Unit 2 RIM-26-90 Plant Vent Gas, Wide Range Gas Monitor
- Unit 2 RIM-26-13 Plant Stack Effluent
- Unit 2 RIM-26-14 Plant Stack Effluent
- Unit 2 RIM-26-69 ECCS Effluent Gas “SA”
- Unit 2 RIM-26-70 ECCS Effluent Gas “SB”
- Unit 2 RIM-26-12 Fuel Handling Building Stack

In addition, environmental qualifications for the Unit 1 and Unit 2 ECCS RMS sampling equipment and associated electronics were reviewed against applicable Radiation, Chemical Spray & Submergence Zone Maps.

The RMS equipment design, installation, and operations were compared against TS, vendor manual specifications, Offsite Dose Calculation Manual (ODCM), 10 CFR Part 20, and procedural details.

b. Findings

No findings of significance were identified.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed licensee evaluations and actions for the following Condition Reports (CR) associated with RMS operations:

- CR 99-2078 Unit 2, ECCS “A” & “B” Sample Pumps Found to be Inoperable
- CR 00-1583 Review of Unit 1 RMS 26-31, June-August Filter Paper Concerns
- CR 00-1581 Review of Unit 2 Plant Vent RSS-26-90 Review WRGM Concerns
- CR 00-1582 Review of Unit 1 Plant Vent RCS-26-1 Concerns

Licensee actions were reviewed against TS, 10 Part 20 requirements, Appendix I to 10 CFR Part 50 design criteria, and Off-Site Dose Calculation Manual details.

a. Findings

No findings of significance were identified.

2PS3 Radiological Environmental Monitoring Program

.1 Meteorological Monitoring

a. Inspection Scope

Meteorological monitoring program guidance and operations were evaluated. Meteorological tower and equipment material condition, and functionality were reviewed and discussed. Operability of local and control room data readouts, and control room recording instruments were verified. Operator knowledge of emergency procedures details regarding primary and backup meteorological data in the event of a radiological emergency were evaluated. Data for the meteorological monitoring system semiannual calibration conducted June 2000; and selected daily functional checks conducted between December 2000 - January 2001, were reviewed and discussed.

Program implementation was reviewed against TS requirements; UFSAR descriptions; guidance provided in Safety Guide 23, Onsite Meteorological Programs, dated 02/17/72, and Regulatory Guide 1.21, Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from

Light-Water-Cooled Nuclear Power Plants. In addition, the following procedures associated with meteorological monitoring system operations were reviewed and discussed with licensee representatives:

- Emergency Plan Implementing Procedure (EPIP) 08, Off-site Notifications and Protective Action Recommendations
- Instrument and Control Procedure 1400055, Environmental Data Acquisition Semi-Annual Calibration
- Operating Procedure 1400051, Meteorological Data System Daily Channel Check
- COP C-2000, Offsite Dose Calculation Manual

b. Findings

No findings of significance were identified.

.2 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed and discussed program issues evaluated in an on-going St. Lucie Chemistry Quality Assurance audit, QSL-CHM-01-02 associated with meteorological monitoring system operations. The status and completed actions for the following CRs associated with meteorological monitoring sensor equipment accuracy, data recovery, and operability concerns were reviewed and discussed:

- 00-1433 Meteorological Data Quality Control Unacceptable
- 01-0020 Meteorological Temperature Channel Drift Unacceptable, 4th Quarter Data Recovery 34% Usable on Delta T Data Recovery for CY 2000 at 50%
- 01-0236 Meteorological Daily Channel Check Documentation Not Available for Select Period of Calendar Year 2000
- 01-0351 Improper Calculation Sub-routine for 33 meter temperature sensor
- 01-1359 Formula for Conversion of 33.5 meter Temperature Normalization Not Available
- 01-1389 Procedural deficiency regarding source of backup meteorological monitoring data
- 01-1390 Re-evaluate NOAA Station as source of backup Meteorological data

Licensee prioritization of the issues, and adequacy of proposed or completed corrective actions were reviewed against the licensee's ability to conduct routine and emergency preparedness off-site dose evaluations specified by the ODCM or applicable EPIPs.

b. Findings

No findings of significance were identified.

3. SAFEGUARDS

Cornerstone: Physical Protection (PP)

3PP1 Access Authorization

a. Inspection Scope

The licensee is committed to the control of access to its protected and vital areas as defined in Revision 54 of the Physical Security Plan dated January 1, 1998. The inspector reviewed those controls performed at the Corporate Offices with respect to background investigations, psychological evaluations, fitness for duty testing, conditional access, fingerprinting and the cancellation of such access. The inspector also reviewed the St. Lucie Procedure ADM-15.02, Access Authorization and Control and Gate Pass Program, dated December 8, 2000. This procedure defines those processes for key control, search of vehicles and personnel, visitor escort and weekly testing of search equipment. The measures for the control of site security computerized access authorizations were also reviewed. There were no St. Lucie licensee event reports associated with access controls to review. Condition Report 00-1018, dated May 18, 2000, relative to an internal audit finding of procedural deficiency was reviewed to verify that procedure FFD-1, Selection and Notification for Testing, was revised to clarify how the licensee handles followup testing of outage workers who are not available for 3 years of testing. St. Lucie Procedure FFD-3, Alcohol Testing, and its' associated "Daily Check List" records for the testing of the intoxilizer and specimen refrigeration units were also reviewed to verify that the proper storage of specimen left in the refrigerator overnight.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Initiating Events Cornerstone - Unplanned Scrams

a. Inspection Scope

The inspectors verified accuracy of the reported PI for "Unplanned Scrams Per 7000 Critical Hours" and "Unplanned Scrams With Loss Of Normal Heat Removal" by reviewing applicable data for the past four quarters. There have been no unplanned scrams by either unit during the previous four quarters of the year 2000. The scram mentioned in Section 4OA3 below will be reported for the first quarter of 2001.

b. Findings

No findings of significance were identified.

.2 Emergency Preparedness Cornerstone

On January 10-11, 2001, licensee records were reviewed to determine whether the submitted PI statistics (through the third quarter of 2000) were calculated in accordance with the guidance contained in Section 2.4 (Emergency Preparedness Cornerstone) of NEI 99-02, Revision 0, Regulatory Assessment Performance Indicator Guideline.

Emergency Response Organization (ERO) Drill/Exercise Performance PI

a. Inspection Scope

The inspector assessed the accuracy of the PI for ERO drill and exercise performance (DEP) over the past eight quarters through review of a sample of drill records. Documentation was reviewed for ERO drills conducted in January and September 2000 and for control room simulator evaluations conducted in the third quarter of 2000 to verify the licensee's reported data regarding successes in emergency classifications, notifications, and protective action recommendations.

b. Findings

No findings of significance were identified.

ERO Drill Participation PI

a. Inspection Scope

The inspector assessed the accuracy of the PI for ERO drill participation during the previous eight quarters through selective review of the training records for the 81 personnel assigned to key positions in the ERO as of the end of the third quarter of 2000.

b. Findings

No findings of significance were identified.

Alert and Notification System Reliability PI

a. Inspection Scope

The inspector assessed the accuracy of the PI for the alert and notification system reliability through review of a sample of the licensee's records of the biweekly silent tests and quarterly full-cycle tests conducted from January 1 to September 30, 2000.

b. Findings

No findings of significance were identified.

4OA2 Identification and Resolution of Problems

The licensee's failure to promptly identify and correct a condition adverse to quality and to take prompt corrective actions associated with the Unit 2 control room emergency cleanup system (CRECS) is described in report Section 1R15.2 above.

4OA3 Event Follow-up

.1 Unit 2 Reactor Trip

a. Inspection Scope

On March 14, Unit 2 tripped from full power due to a loss of both CEA motor generator sets. An inspector promptly responded to the control room and confirmed that the unit was stable in Mode 3, and that all safety-related mitigating systems had operated properly. Operator and plant response was verified to be as expected by reviewing plant parameters, strip charts, and the Sequence of Events Recorder; and discussing the event with plant operators and the licensee's Event Response Team. The only equipment problem of significance was the failure of the 2A 6.9 Kilovolt alternating current bus to transfer from the auxiliary to startup transformer. This resulted in a loss of the 2A1 and 2B2 reactor coolant pumps (RCP) and 2A main feedwater (MFW) pump. The inspector verified that the remaining RCPs and 2B MFW pump were sufficient for the operators to shutdown and cooldown the unit per their procedures. The inspector also discussed the risk significance with the onsite risk analyst and Region II personnel, and verified that appropriate notifications were made in accordance with 10 CFR 50.72.

b. Findings

No findings of significance were identified.

2. (Closed) LER 50-335, 389/2001-001 and 50-335, 389/2001-001-01: Control Room Ventilation Emergency Recirculation Procedures Inadequate

The safety significance of this event, its apparent cause, the inspector's followup actions, and associated enforcement are described in report sections 1R15.1 and 1R15.2. The inspector verified the licensee's interim corrective actions to conduct an acceptable Unit 2 surveillance test, and provide operators with necessary instructions for CRECS operation during an accident via night orders. The inspector also verified subsequent procedure changes to Unit 1 and 2 procedures OSP-25.01, Control Room Pressure Periodic Test, and ONP-25.02, Ventilation Systems, would ensure proper alignment of the CROAI valves to adequately pressurize the control room for surveillance testing and during accident conditions. The inspector confirmed that an EOP matrix item was entered to assess possible enhancements to the plant EOPs for ensuring timely control room pressurization following an accident. These LERs are considered closed.

4OA6 Meetings

Exit Meeting Summary

The inspector presented the inspection results to members of licensee management and staff at the conclusion of the inspection on April 3, 2001. Additionally, interim inspection results were presented on January 12, January 19, and March 1, 2001. The inspectors confirmed that no proprietary information is contained in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee
G. Bird, Protection Services Manager
D. Calabrese, EP Supervisor
R. De La Espriella, Site Quality Manager
B. Dunn, Site Engineering Manager
J. Gianfrancesco, Maintenance Manager
W. Guldemond, Operations Manager
R. Kundalkar, Site Vice President
W. Lindsey, Training Manager
A. Scales, Operations Supervisor
E. Weinkam, Licensing Manager
R. West, Plant General Manager
C. Wood, Work Control Manager

NRC
L. Wert, Chief Reactor Projects Branch
B. Moroney, Project Manager

ITEMS OPENED AND CLOSED

Opened and Closed

NCV 50-389/00-08-01	Failure To Ensure Fulfillment Of The Control Room Pressurization Safety Function (Section 1R15.1).
NCV 50-389/00-08-02	Failure To Identify And Promptly Correct Operability Issues Associated With CRECS (Section 1R15.2).

Closed

LER 50-335, 389/2001-001	Control Room Ventilation Emergency Recirculation Procedures Inadequate (Section 4OA3.2).
LER 50-335, 389/2001-001-01	Control Room Ventilation Emergency Recirculation Procedures Inadequate (Section 4OA3.2).

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at *http://www.nrc.gov/NRR/OVERSIGHT/index.html*.

LIST OF DOCUMENTS REVIEWED

Safety Evaluations Reviewed:

PCM 00028	1B Diesel Fuel Oil Transfer Line Replacement
PCM 99116	Shield Building Secondary Bellows Replacement for CCW Penetration P-15 through P-24
PCM 99117	Partial Replacement of ECCS Suction Lines 24" CS-2 & CS-3
PCM 99104	Appendix 'R' SSA Circuit Modifications
SEMS-97-086	Engineering Evaluation for Installation of Mechanical Blocks on HCV-14-8A, 8B, 9 and 10
SEMS-99-064	Review of Unit 2 SDC System Operation
SENS-00-001	Removing Auto Control Function for TCV-14-4B & Blocking Valve Fully Open
PSL-ENG-SEES-99-068	Crosstie of the Spent Fuel Pool Pumps Power Supply
SEMS-00-016	Perforated Strainer Mesh in ICW Strainer SS-21-1A/B
PSL-ENG-SEFJ-00-016	St. Lucie Unit 2 FSAR Change for Chapter 10 AFW Evaluation Analyses
SEMS-98-101	Unit 2 S/G Secondary Side Foreign Objects
SEMS-90-05	Generic Use of Sealant Injection
SENS-00-132	Operation of a Main Feedwater Regulating Valve with the Locking Pin Installed

Screened Out Changes Reviewed:

Test 1-ICP-0700051	Auxiliary Feedwater Actuation System Monthly Functional Test
Procedure 2-ONP-22.01	Rapid Down Power
Procedure EM-0930064	600 Volt and Below Terminations Connections and Insulation
Procedure 1-ARP-01-N00	Annunciator Response Procedure Control Room Panel N RTGB 105
Procedure 0-MMP-01.17	Reactor Coolant Pump Model N9000 Seal Removal and Installation
Procedure AP-0005765	Non-Licensed Operator Requalification Program
Procedure 1-MMP-02.02	Charging Pump Maintenance
CRN 0048-9212	Add Valve to Service Water System
CRN 0048-9217	EDG Governor Power Supply Relay Modification
TSA 1-00-007	RPS D Linear Power Range Detector and Power Range Control Channel 2

QA/QC Audit Reviewed:

PSL Nuclear Assurance Quality Report 00-0277	Assess Implementation of the PSL 50.59 Screening Program

Condition Reports Reviewed:

00-0492	00-1118	00-1050
00-0520	00-1609	
00-0992	00-1763	