U.S. NUCLEAR REGULATORY COMMISSION

REGION II

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

Report Nos: 50-335/98-07, 50-389/98-07

Licensee: Florida Power & Light Co.

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

Location: 6351 South Ocean Drive
Jensen Beach, FL 34957

Dates: May 10 - June 27, 1998

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EXECUTIVE SUMMARY

St. Lucie Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-335/98-07, 50-389/98-07

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 7-week period of resident inspection; in addition, it includes regional inspections of maintenance, engineering, health physics, chemistry, and security.

Operations:

- The Unit 2 power reduction on May 21 involved clear three-part communication, and effective control by shift supervision. Operators used appropriate procedures and reactivity changes were well controlled. Overall, the inspector concluded that the evolution was performed effectively. (Section O1.2)

- The inspector observed portions of six Non-Licensed Operator rounds. The inspector verified that the operators were knowledgeable of equipment on their watch stations, appropriately identified deficiencies to the control room with followup actions taken, and followed approved procedures for other assigned tasks. (Section O4.1)

- The licensee had developed sufficient corrective actions to address recurrence of multiple overtime violations that exceeded the specified Technical Specification limits. These violations were closed. (Section O8.1)

- The licensee was active in ensuring that the licensed operators were not subjected to routine and heavy use of overtime. This caused the licensee to adjust vacation schedules and personnel to ensure excessive overtime would not be required. (Section O8.1)

Maintenance:

- Maintenance activities were generally conducted thoroughly and professionally. The technicians observed by the inspectors were knowledgeable about the equipment they were working on, and about their assigned job tasks. All procedures were followed appropriately and test equipment was properly calibrated. (Sections M1.1, M1.2, M1.3, and M1.4)

- The inspectors identified a general deficiency in the use of three part communications by maintenance personnel. (Section M1.1)

- The inspectors verified that the Maintenance Rule periodic evaluation addressed the areas specified in NUMARC 93-01 and met the requirements of paragraph (a)(3) of 10 CFR 50.65. (Section M1.5)

- A detailed Maintenance Rule structures inspection and monitoring program was in place and inspection results were well documented. (Section M8.3)

Engineering:

- The licensee's event response team for the June 8 storm damage did a good job of chronicling and evaluating equipment problems which challenged the Unit 1 operators. (Section E1.10)

- LER 50-389/98-003-00, "Containment Pressure Instrumentation Design Single Failure Vulnerability," was closed. A violation of Criterion III of Appendix B to 10 CFR 50 was identified. However, consistent with the NRC Enforcement Policy guidance of Section VII.B.3, the NRC has chosen to exercise enforcement discretion. (Section E8.15)

- The licensee has been adequately implementing Plant Changes and Modifications in accordance with Regulatory Guide 1.97. Additionally, the information from the changes have been adequately incorporated into the UFSAR. (Sections E1.1, E1.2, E1.3, E1.4, E1.5, E1.6, E1.7, E1.8, and E1.9)

- The number of temporary modifications was not excessive for a two unit installation with both units in operation. Numerous techniques were used to approve and control temporary plant modifications. (Section E2.1)

- The 10 CFR 50.59 screenings and evaluations reviewed by the inspector were found to be adequate. (Section E3.3)

- Based on reviews conducted during this inspection, the inspectors determined that licensee engineering personnel are experienced and possess good technical and plant knowledge. This personnel knowledge includes a good understanding of the engineering processes and organizational interfaces involved in controlling, maintaining, and supporting the operating plant. (Section E4.1)

- The inspectors concluded that the licensee was actively engaged in self-assessments and that the assessments were identifying program enhancements, which the licensee was implementing. These assessment activities were viewed as a strength by the inspector. (Section E7.1)

Plant Support:

- The primary water chemistry control parameters were maintained well within the applicable Technical Specifications and procedure limits. (Section R1.1)

- No adverse trends were identified in the 1996 and 1997 Annual Radiological Effluent Report, and all radiological effluents were well within limits. (Section R1.2)

- The licensee's planning and coordination for the transport and disposal of the original steam generators were good. The staff responsible for the preparation and transportation of radioactive materials and radioactive waste were knowledgeable of the applicable transportation requirements. Radioactive waste and radioactive material shipping documentation and records papers met applicable requirements and were properly completed. (Section R3.1)

- Licensee efforts in reducing and controlling the quantity of contaminated materials on site following the steam generator replacement project were good. Radioactive waste streams were properly characterized. (Section R3.1)

- Compensatory measures in place at the time of the inspection were in compliance with the Physical Security Plan. (Section S1.1)

- The licensee's access control program had been modified and was improved. Records reviewed met the requirements specified in the PSP. (Section S2.2)

- The licensee was conducting testing and maintenance for security related equipment as required by the PSP and implementing procedure. (Section S2.4)

- Both passive and active barriers of the VBS were in place and operational as required by the PSP. (Section S2.5)

- The Physical Security Plan and Contingency Plan revisions reviewed by the inspector did not decrease the effectiveness of the plans and were in accordance with the provisions specified in 10 CFR 50.54(p). (Section S3.1)

- Safeguards Information was appropriately handled and stored as required by 10 CFR 73.21. (Section S8.2)

Report Details

Summary of Plant Status

Unit 1 operated at full power until June 8, at which time the unit was forced to reduce power to 85 percent due to lightning damage on a Circulating Water Pump motor and a Condensate Drain Pump motor. The unit returned to full power on June 17 and remained there for the balance of the report period.

Unit 2 entered the report period at full power. On May 21, the licensee reduced power to 78 percent to allow repair work on the 2B1 Intake Traveling Screens. The unit was returned to full power on May 30 and remained there for the rest of the report period.

I. Operations

01 Conduct of Operations

01.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, the conduct of operations was professional and safety-conscious. Specific events and noteworthy observations are detailed in the sections below.

01.2 Downpower to Repair the 2B1 Traveling Screen (71707)

On May 21, the licensee reduced power on Unit 2 to remove the 2B1 Circulating Water Pump from service. This allowed scaffolding to be constructed in the well to repair the 2B1 Intake Traveling Screens. The power reduction involved clear three-part communication, and effective control by shift supervision. Operators used appropriate procedures and reactivity changes were well controlled. Overall, the inspectors concluded that the evolution was performed effectively.

02 Operational Status of Facilities and Equipment

02.1 Engineered Safety Feature System Walkdowns (71707)

The inspectors used Inspection Procedure 71707 to walk down accessible portions of the following ESF systems:

- Hydrogen Analyzers (Unit 1)
- Hydrogen Recombiners (Unit 1)

Equipment operability, material condition, and housekeeping were acceptable in all cases. Several minor discrepancies were brought to the licensee's attention and were corrected. The inspectors identified no substantive concerns as a result of these walkdowns.

02.2 Equipment Clearance Order (ECO) Issues (71707)

The inspectors reviewed several ECOs during the inspection period. ECOs that were observed in effect were reviewed for technical and administrative adequacy. One ECO, 1-98-05-080, reviewed was no longer in effect. The inspectors verified that the equipment was restored, returned to service appropriately, and that tags were removed. The following ECOs were reviewed.

- 1-98-05-080: Charging Pump 1C
- 1-98-06-024: Circulating Water Pump 1B2
- 1-98-06-025: Heater Drain Pump 1B
- 1-98-06-027: Electro-Hydraulic Fluid Pump 1B
- 2-98-06-074: 2A Vital SAS/SUPS Inverter

The inspectors found the ECOs reviewed were technically adequate and the administrative details were performed in accordance with the licensee's procedures.

04 Operator Knowledge and Performance

04.1 Operator Knowledge and Performance (71707)

During the report period, the inspectors observed portions of six Non-Licensed Operator (NLO) rounds. The inspectors verified that the operators were knowledgeable of equipment on their watch stations, appropriately identified deficiencies to the control room with followup actions taken (i.e., a Plant Work Order written), and followed approved procedures for other assigned tasks. No deficiencies were noted in these areas. The inspectors did identify a few integrated plant knowledge deficiencies among several of the junior NLOs observed. This observation was also identified by the licensee management. Plans were being made to address these deficiencies by the training department.

08 Miscellaneous Operations Issues

08.1 (Closed) VIO 50-335,389/97-04-02, "Routine Use of Heavy Operator Overtime"

(Closed) VIO 50-335,389/97-11-01, "Personnel Violating Technical Specification Overtime Limits - Repeat Violation"

(Closed) VIO 50-335,389/97-14-01, "Exceeding Technical Specification Overtime Limits - Repeat Violation"

a. Inspection Scope (92901)

The three violations listed above were all cited due to inadequate licensee control of overtime by personnel performing safety-related functions. The licensee instituted multiple corrective actions to ensure that all personnel would adhere to the overtime limitations specified in Technical Specification (TS) 6.2.2.f.2.

b. Observations and Findings

Violations 97-11-01 and 97-14-01 both documented multiple violations of personnel exceeding the TS limits of 24 hours of work in a 48-hour period and 72 hours in a seven-day period. In response to these violations, the licensee strengthened contractor control in the overtime area and implemented a computerized tracking system for FPL employees. The inspectors found the corrective actions for these two violations were adequate to prevent recurrence. Violations 97-11-01 and 97-14-01 are closed.

Violation 97-04-02 cited the licensee for scheduling the Reactor Control Operators for routine heavy use of overtime (60 hours or more a week) during periods of routine operation. The licensee determined that their prior staffing plan was unsatisfactory in that FPL did not adequately account for attrition, carried-over vacation, or illness that would dilute the available on-shift licensed operator pool. Adding to the shortage of licensed operators, the licensee had licensed operators in positions outside the control room. However, the industry had identified this as a good practice.

The licensee's corrective actions included returning to a "normal" 40-hour base work week for the operators. This was facilitated by returning some licensed operators from the Work Control Center and by destaffing the Nuclear Watch Engineer's position (Refer to Inspection Reports 50-335,389/97-05, 50-335,389/97-06, and 50-335,389/97-10 for further details). As a long term solution, the licensee committed to license more Reactor Operators and Senior Reactor Operators. The first set of operators was licensed in December 1997 (6 total). The second set was scheduled in June 1998 (6 total), and the third set is planned for December 1998 (15 total). The inspectors concluded that these corrective actions, if implemented, would address the cause of the violation.

The inspectors reviewed recent and future work schedules for the Reactor Controls Operators (RCO), the Assistant Nuclear Plant Supervisors (ANPS), and the Nuclear Plant Supervisors (NPS). Although all groups were required to work some overtime in the past several months, the overtime could not be termed "routine" or "heavy." However, the inspectors noted that the predicted summer schedule for the licensed operators included a significant amount of overtime (more than 60 hour work weeks for some ANPSs) to cover planned vacations.

Operations Management reviewed the planned vacation schedule and issued a revised shift schedule for the summer. Some vacations were curtailed, while other personnel were "borrowed" back from the Clearance Center and the Work Control Center. The licensee plans for the three SRO candidates to be ready to cover ANPS positions in August and this would help alleviate the problem. Operations Management stated that they did not plan to staff non-operations positions with SROs in the near future. The licensee believed that the most recent destaffing was in the best interest of the plant. Based upon the discussions with Operations

Management, the inspectors determined that the licensee was adequately addressing the violation. This item is closed.

c. Conclusions

The licensee has developed sufficient corrective actions to address recurrence of multiple overtime violations that exceeded specific TS limits. Also, the licensee was active in ensuring that the licensed operators were not subjected to routine heavy use of overtime. This caused the licensee to adjust vacation schedules and personnel to ensure excessive overtime would not be required. Based on this review, all three violations were closed.

08.2 (Closed) IFI 50-335,389/97-05-02, "Licensee Review and Clarification of Procedure (ADM-11.03) for Performing Temporary Changes to Procedures"

a. Inspection Scope (92901)

The inspectors reviewed the questions raised in Inspector Followup Item IFI 50-335,389/97-05-02 and evaluated the licensee's response.

b. Observations and Findings

Inspector Followup Item IFI 50-335,389/97-05-02 documented five outstanding issues that the inspectors raised concerning the procedure for the temporary change (TC) process. First, the inspectors questioned the licensee's definition for a "member of plant management staff" who could approve TCs. Procedure ADM-11.03, Revision 5, "Temporary Changes to Procedures," was changed to clarify this issue. Section 4.3 defined a "member of plant management staff" as a permanent FPL employee who is functioning in a supervisory position referenced in either the Quality Instruction Organization documents or the St. Lucie Nuclear Plant Organization Chart or personnel in the positions of Foreman, Chief, Supervisor, and Reactor Controls Operator.

Second, the inspectors questioned whether adequate training had been provided to all employees regarding the review and approval of TCs. Section 6.1.5 of Procedure ADM-11.03 delineated Management Member's responsibilities concerning TCs. Not only does this section reiterate the definition of a "member of plant management staff," but also stipulated that the individual must be from the responsible department for that procedure and act as the Department Head when reviewing the change. Furthermore, the procedure required the "member of plant management staff" should verify the TC did not change the intent of the original procedure and verify the TC was technically correct. The definition of who could review and approve TCs was incorporated into their annual employee training.

Third, the inspectors noted that the person who approved TC 1-97-053 also determined the need to have a Facility Review Group review. Although, Procedure ADM-11.03 did not specifically forbid this, the licensee indicated that this did not meet the intent of the procedure.

Subsequently, the procedure was revised to specifically prohibit this.

Fourth, Section 6.1.1.B and the checklist stated that Part A was to be completed by the author. This was in conflict with Section 3.4.2 that stated that the TC author or person assigned the responsibility for the TC complete part A. The inspectors noted that an individual other than the TC author completed part A of the TC checklist on TC 1-97-054. The licensee deleted Section 6.1.1.B and the associated note on the checklist.

Fifth, the inspectors noted several examples where the TC request form indicated that a procedure on the other unit was affected by the TC. There did not appear to be a clear tracking mechanism to ensure that the procedure on the other unit was changed. The licensee revised the procedure to include a signoff that the other unit's procedures were changed before closing out the TC.

The inspectors reviewed all of the licensee's actions and found that they adequately addressed the inspector's concerns. The inspectors identified no other substantial concerns with the procedure. This item is closed.

c. Conclusions

The licensee adequately addressed the inspector's identified concerns with Revision 5 to Procedure ADM-11.03. The IFI has been closed.

08.3 (Closed) VIO 50-335,389/97-14-02, "Unauthorized Approval Of Overtime Exceptions" (92901)

During the Steam Generator Replacement Outage, the Project Director approved exceptions to the overtime limits imposed by TS 6.2.2 for contractor individuals working on the project. This was a violation of that specification which required that all exceptions be approved by the Plant General Manager or a higher manager.

As corrective action, the licensee counseled the Project Director and provided training to the contract personnel with regard to the procedural and TS requirements concerning overtime. The licensee also provided additional oversight of contractors during the outage. Based on this review, the inspectors concluded that the actions should prevent recurrence. Therefore, this violation is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (61726)

The inspectors observed all or portions of the following work activities:

- WO 1-9800282801 Defeat auxiliary relay for RTGB-101 annunciators time delay
- WO 2-9800310701 Defeat auxiliary relay for RTGB-201 annunciators time delay
- WO 1-9800976701 Engineering Safeguards Actuation System monthly preventive maintenance

The inspectors found the work performed under these activities to be professional and thorough. All work observed was performed with the work package present and in active use. Technicians were experienced and knowledgeable of their assigned tasks. The inspectors frequently observed supervisors and system engineers monitoring job progress. Quality Control personnel were present when required by procedure. However, the inspectors did observe a general lack of three part communications. Although Procedure ADM-08.02, Revision 20, "Conduct of Maintenance," only required the Journeyman to use three part communications when using "page, phones, radios, or in noisy areas," Maintenance management's expectation was to use three part communications during all maintenance activities.

In addition, reference specific discussions of maintenance observed under Sections M1.2, M1.3, and M1.4 below.

M1.2 Preventive Maintenance on Switchgear 1A3-8

a. Inspection Scope (61726)

The inspectors observed portions of the thirty-six-month preventive maintenance (PM) performed on the 1A3-8 switchgear, the supply breaker from the 1A 4160 volt bus to the 1AB bus. Additionally, the inspectors reviewed the recommended PM in the breaker technical manual.

b. Observations and Findings

The licensee performed the PM in accordance with Procedure EMP-52.01, Revision 0, "Periodic Maintenance of 4160 Volt Switchgear." The inspectors verified that the major recommendations in the technical manual had been accurately translated into the licensee's procedures. The inspectors identified no substantial deficiencies. The inspectors then observed the Electrical Maintenance (EM) journeymen perform part of the PM. The inspectors found that both workers were knowledgeable of

the procedure and of the equipment on which they were working. The procedure was opened and in use by the workers. All Measuring and Test Equipment (M&TE) was properly calibrated. However, the inspectors noted that the micrometers used during the PM were marked as restricted for outer diameter use only. The inspectors observed the journeyman using the micrometers for inner diameter measurements and questioned the workers. The journeymen stated that they had made a mistake and stopped work to retrieve a correct usage micrometer. Meanwhile, the inspectors verified that the remaining journeyman identified all other inner diameter measurements previously collected were performed with the proper M&TE. The inspectors identified no other concerns with the maintenance.

M1.3 2C Auxiliary Feedwater Preventive Maintenance

a. Inspection Scope (62707)

The inspectors witnessed maintenance personnel perform preventive maintenance on the 2C Auxiliary Feedwater (AFW) Pump. The inspectors reviewed the procedures associated with this activity.

b. Observations and Findings

On May 12, the inspectors witnessed maintenance personnel change the oil in the 2C AFW pump governor. This activity was performed in accordance with Procedure 2-IMP-09.01, Revision 4, "Instrument and Control Department 2C Auxiliary Feedwater Pump Governor Oil Change Instruction." The inspectors noted the system engineer participated in the activity and provided guidance as necessary. In addition, maintenance personnel lubricated the AFW Turbine Trip and Throttle valve in accordance with Procedure 2-M-0018, Revision 54, "Mechanical Maintenance Safety-Related Preventive Maintenance Program." Personnel associated with both activities appeared knowledgeable about the tasks to be performed, were well prepared, and completed the activities in accordance with the approved procedures. The inspectors concluded the licensee's performance was good.

Additionally, the inspectors witnessed a non-licensed operator perform the local actions associated with operating the system. The inspectors concluded that the operator was knowledgeable about the system and followed the approved procedure.

M1.4 Semiannual Test of Unit 1 Control Element Assembly Block Circuit

a. Inspection Scope (61726)

On May 18, the inspectors observed portions of the Unit 1 Control Element Assembly (CEA) Block Circuit test. The inspectors verified procedural and Technical Specification (TS) compliance.

b. Observations and Findings

The licensee completed Procedure IC 1-0110068, Revision 2, "Six Month Operational CEA Block Circuit Functional Test," on May 18. This procedure performed a functional test on the CEA Position Display System Block Circuit. The test verified that the circuit maintained the CEA Group Overlap and Group Out of Sequence requirements of TS 3.1.3.6. The test also verified that the circuit prevented the regulating CEAs from being inserted beyond the Power Dependant Insertion Limit of TS Figure 3.1-2 by generating a CEA motion inhibit signal in the Control Element Drive System.

The inspectors reviewed the TS requirements previously discussed and TS 4.1.3.1.4.b and verified that this procedure met these requirements. The inspectors observed I&C performing the test in the control room. The technicians were deliberate in their execution of the procedure, knowledgeable about the intent of the procedure, and consistent in their communications with each other. The inspectors noted no problems with the conduct of the test.

Technical Specification 3.1.3.1 required the CEA Block Circuit to be operable. The inspectors verified that the Reactor Control Operator (RCO) had logged the entry into the Limiting Condition for Operation (LCO), and that the Assistant Nuclear Plant Supervisor was aware of the LCO entry. Also, the inspectors verified that the Board RCO was aware of the evolution. The RCO was aware of the test, and was monitoring alternative indications for unexpected rod motion (power, temperature, etc.). The inspectors identified no weaknesses in this area.

M1.5 Maintenance Rule Periodic Evaluation

a. Inspection Scope (62706)

Paragraph (a)(3) of the Maintenance Rule required that performance and condition monitoring activities as well as associated goals and preventive maintenance activities be evaluated taking into account, where practical, industry-wide operating experience. This evaluation was required to be performed at least one time during each refueling cycle, not to exceed 24 months between evaluations. The inspectors reviewed the licensee's periodic evaluation process, including the current periodic assessment, dated August 1997, to determine compliance with the requirements of paragraph (a)(3) of 10 CFR 50.65.

b. Observations and Findings

At the time of the Maintenance Rule inspection, September 1996, the licensee had not completed their first periodic evaluation. The first periodic evaluation, dated August 1997, was performed in accordance with licensee Procedure ADM-17.08, Revision 11, "Implementation of 10 CFR 50.65, The Maintenance Rule," and System and Component Engineering Guideline SCEG-008, Revision 0, "Guideline for Maintenance Rule Periodic Assessment." The procedure and guideline required an annual assessment

or evaluation. The inspectors found that the evaluation met the requirements of 10 CFR 50.65 and addressed all of the topics detailed in the guidance of NUMARC 93-01, Revision 2. However, the evaluation contained only minimal detail in a number of areas. One example where detail was lacking was in the area of industry-wide experience. The licensee was in the process of performing the second annual evaluation and stated that they had realized more detail was needed and would incorporate more detail in the second and future evaluations.

During review of the first evaluation, the inspectors reviewed the licensee's Maintenance Rule disposition of primary water stress corrosion cracking of Inconel 600 pressurizer instrument nozzles (an industry problem addressed by the Combustion Engineering Owners Group). The inspectors concluded that the expert panel disposition of this problem under the Maintenance Rule was appropriate.

M1.6 Conclusions to Conduct of Maintenance

Maintenance activities were generally conducted thoroughly and professionally. The technicians observed by the inspectors were knowledgeable about the equipment they were working on and about their assigned job tasks. The inspectors identified a general deficiency in the use of three part communications by maintenance personnel. All procedures were followed appropriately and test equipment was properly calibrated. The inspectors identified an occasion of improper use of M&TE. Additionally, the inspectors verified that the Maintenance Rule periodic evaluation addressed the areas specified in NUMARC 93-01 and met the requirements of paragraph (a)(3) of 10 CFR 50.65.

M8 Miscellaneous Maintenance Issues

M8.1 (Closed) VIO 50-335/97-05-03, "Failure To Provide Adequate Work Instructions For A Work Order" (92902)

This violation occurred as a result of a work order (WO) that contained inadequate instructions for the intended work. The WO involved many complex steps and allowed repairs to be completed on the Digital Data Processing System (DDPS) computer at the discretion of the supervisor. It did not contain detailed step-by-step instructions.

As corrective action to the violation, the licensee issued a letter to all I&C supervisors to reinforce the expectations with regard to working within the scope of a WO. Additionally, stand down meetings were held with the planners to review the lessons learned from this event. The licensee also issued Revision 4 to I&C Procedure 1400022, "DDPS Load And Dump Procedure." This revision provided the appropriate steps necessary to modify the DDPS. Also, the licensee issued Procedures 1(2)-IMP-65.06, Revision 0, "Digital Data Processor System (DDPS) Operational Assessment Procedure," which provides guidance on assessing operational status of the system as well as troubleshooting guidance. Lastly, the licensee issued Revision 13 to Procedure ADM-0010432, "Control Of Plant Work Orders." This revision added a step which would allow work to be

conducted at the direction of and with direct guidance by the Maintenance Supervisor. The inspectors discussed with the licensee circumstances which should preclude a Maintenance Supervisor from directing maintenance (i.e., maintenance associated with safety related or seismic equipment). The licensee stated that it was not their intent to circumvent additional requirements. As a result, the licensee clarified the statement in Revision 20 of Procedure ADM-0010432.

This item is closed.

M8.2 (Closed) LER 50-389/98-004-00, "Waste Gas Decay Tank Operation With No Available Oxygen Analyzers Prohibited by Technical Specifications" (92903)

This LER was discussed in Inspection Report 50-335,389/98-06. A Non-Cited Violation was identified with the event (NCV 50-335,389/98-06-02). No new items were revealed by this LER. This item is closed.

M8.3 (Closed) IFI 50-335,389/96-13-04, "Followup on Licensee Actions to Provide Performance Criteria for Structures After Industry Resolution of This Issue" (92903)

This review was conducted to followup on licensee actions to provide performance criteria for structures after industry resolution of this issue. At the time of the Maintenance Rule inspection, the licensee had not established performance criteria for reclassifying structures from (a)(2) to (a)(1). At the time the IFI was opened, no industry guidance had been established in this area. Since that time, Revision 2 to Regulatory Guide (RG) 1.160, "Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," has been issued to provide guidance for performance criteria for structures. After issuing Revision 2 to RG 1.160, the licensee issued Revision 2 to their structures program, "Scoping Document for the Implementation of the Maintenance Rule for Monitoring the Effectiveness of Maintenance of Structures." Additional requirements for monitoring structures were detailed in the following System and Component Engineering Department Guidelines:

SCEG-003, Revision 1, "Guideline for the Condition Survey of Structures and Supports By Plant Personnel"

SCEG-009, Revision 0, "Guideline for Structural Condition Monitoring By a Qualified Inspector"

SCEG-019, Revision 0, "System Engineering System Walkdowns"

The inspectors reviewed the above documents and verified that the licensee had established criteria consistent with RG 1.160 for structures, including the criteria for reclassifying structures for (a)(2) to (a)(1) of the Maintenance Rule. During the review, the inspectors noted one area in Revision 2 of the structures scoping document that needed clarification. Paragraph C stated that "No

structure shall fail in such a way which would cause a reactor scram or excessive unplanned unit availability." The inspectors questioned the term "excessive unplanned unit availability." The Maintenance Rule Administrator stated that the intent and site practice was not to allow any unplanned unavailability caused by a structure. He further stated that the scoping document was currently under revision and the wording would be revised to agree with their intent.

In addition to review of the above documents, the inspectors reviewed the status of the structures inspection program, including a sample of inspection documentation. The program required inspection of all structures in the scope of the Maintenance Rule every 5 years. The first 5-year period ends July 2001. Currently, about 75 percent of the in-scope structures have been inspected. Based on current plans, at the end of the fall 1998 Unit 2 outage, approximately 90 percent of in-scope structures will have been inspected. Plans are to complete the first 5-year inspections well before the July 2001 date.

A detailed structures program was in place and inspection results were well documented.

III. Engineering

E1 Conduct of Engineering

E1.1 Auxiliary Feedwater Flow Indication Range

a. Inspection Scope (37550)

The inspectors reviewed Plant Change/Modification (PC/M) 97-026 - "Auxiliary Feedwater (AFW) Flow Indication Range Change". The review included compliance with site procedures and regulatory compliance. A walkdown of the control room was completed to verify the installed equipment matched the design document. The inspectors reviewed the list of Change Request/Notices (CRN) associated with the modification.

b. Observations and Findings

PCM 97-026 was issued to resolve a discrepancy between existing ranges and Regulatory Guide (RG) 1.97 required ranges for AFW flow indicators FI and FR-09-2A and 09-2B (motor driven AFW pumps) and FI and FR 09-2C (turbine driven AFW pumps). The licensee used a Minor Engineering Package (MEP) for this change. In general the design change package was adequate and included necessary supporting documents to complete the modification, including a FSAR Change Package (FCP) for Final Safety Analysis Report (FSAR) Table 7.5-2 "Safety Related Display

Instrumentation." The PC/M Special I&C Procedure 1400025, Section 9.1.4.A, required the software supervisor to review the database change to determine the effect of the changes on the Emergency Response Data Acquisition Display System (ERDADS) to Emergency Response Data System (ERDS) link.

c. Conclusions

The inspectors concluded that the PC/M was adequate to modify the plant to conform with RG 1.97.

E1.2 PC/M 009-195 Reactor Protection System Nuclear Instrumentation Drawer Replacement

a. Inspection Scope (37550)

The inspectors reviewed the Safety Evaluation (SE) and FSAR Change Package (FCP) for PC/M 009-195 for consistency, and verified the most recent UFSAR had been updated to include the FCP.

b. Observations and Findings

PC/M 009-195 replaced the four excore neutron detectors, cables, amplifiers, and Reactor Protection System (RPS) Nuclear Instrumentation (NI) drawers during a refueling outage in mid 1996. The inspectors noted the changes in the FCP were properly incorporated in the current revision of the UFSAR, however most of the FCP changes were deletions of technical details not specifically addressed in the SE. The inspectors also noted the detectors were used to transmit plant parameters to NRC during an accident over the ERDS link.

For the AFW flow modification and the RPS instrumentation modification, the licensee did not notify the NRC that ERDS datapoint data was being modified. The licensee plans to notify the NRC. The failure to notify the NRC of the minor ERDS changes constitutes a violation of minor significance and is not subject to formal enforcement action.

c. Conclusions

The FSAR Change Package for PC/M 009-195 was adequate and had been incorporated into the UFSAR.

E1.3 Wide Range Steam Generator Level Indication

a. Inspection Scope (37550)

The inspectors reviewed PC/M 94-067 which added one channel of safety grade level indication and recording for the Unit 1 Steam Generators (SG). The review included verification that the instruments were consistent with licensee regulatory commitments, the modification package was reviewed and approved by onsite review organizations, appropriate sections of the FSAR were revised, and the installation was

consistent with installation and testing requirements. CRNs required to modify the package were reviewed as an indicator of overall package quality.

b. Observations and Findings

The inspectors noted there were no electrical load or voltage drop calculations for the new transmitters or other loop components. An Instrumentation and Control (I&C) design engineer stated the engineer who prepared the package determined these to be acceptable; he also stated the I&C design verifier validated it as reflected by their signatures on the package coversheet. The engineer stated this was considered "skill of the craft" for all I&C modifications. There was written analysis in the EP why the modification to control room panels was acceptable from a seismic viewpoint even if there were no written calculations to verify continued seismic qualification of the associated control board with the minor additional load created by the indicators. Additionally, there was a hold point associated with receipt of indicator seismic qualification documentation. The inspectors reviewed changes to design basis documents and UFSAR sections. The changes were adequate. The implementing instructions were clear and complete.

c. Conclusions

PC/M 94-067 was in general a high quality product. The inspectors identified a weakness in the failure to document by formal calculation or other vehicle small electrical load changes. However, the licensee had identified this problem and had taken long-term corrective action.

E1.4 Post Accident Sampling System (PASS) Abandonment

a. Inspection Scope (37550)

The inspectors reviewed PSL-ENG-SEMS-97-053, "10 CFR 50.59 Safety Evaluation for Post Accident Sampling System FSAR Reconciliation," and PC/M 97-047, "PASS Equipment Abandonment," for site procedure and regulatory compliance.

b. Observations and Findings

PC/M 97-047 was issued to restore Unit 1 PASS design configuration. Deficiencies corrected by MEP PC/M 97-047 included:

- reconciliation of drawings
- abandonment of dissolved oxygen and pH analysis instrumentation
- formal abandonment of depressurized separated gas analysis instrumentation
- correction of PASS control panel mimics and mimic drawings
- identification of components in the TEDB
- disabling an automatic sampling procedure from the PASS control panel.

The MEP failed to address any impact the change had on the dose rate and dose to personnel obtaining and analyzing the sample.

c. Conclusions

PC/M 97-047 was adequate in resolving problems previously identified with the PASS system, but failed to address impact of changes on personnel dose.

E1.5 Control Element Drive Mechanism Control System (CEDMCS)

a. Inspection Scope (37550)

The inspectors reviewed PC/M 97-018, "CEDMCS Upgrade."

b. Observations and Findings

PC/M 97-018 installed Automatic CEDM Timer Module (ACTM). CEDM timer module failures were the cause for numerous rod drops during the Unit 1 operation over the past 20 years. The document used to purchase the system was "System Specification for Coil Programmer Automatic CEDM Timer Module," ABB Document Number 00000-ICE-6020, Revision 0. The licensee had an independent third party perform a verification and validation (V&V) of the new CEDMCS module hardware and software. The V&V identified several significant problems which were corrected. The testing on the new equipment was extensive, and included a factory acceptance test, a site test, a pre-modification test on the actual CEDMCS with two of the modules just prior to the refueling outage, and extensive testing after the modification was complete. The inspectors noted that the post modification test required extensive knowledge of the system to conduct it and understand the results because of its style.

c. Conclusions

Due to the willingness to devote additional resources, as well as a very thorough V&V effort, the project to install Automatic CEDM Timer Modules (ACTM) was a success.

E1.6 Containment Purge Valves

a. Inspection Scope (37550)

PC/M 95085, Supplement 0, Revision 0, modified containment purge valves FCV-25-1, 25-2, 25-3, 25-4, 25-5, and 25-6. The affected purge valves are 48 inch Pratt butterfly valves with a Bettis T-520-SR2 pneumatic actuator. The valve design is air to open and spring to close. The modification required that various plant documents be updated.

b. Observations and Findings

Maintenance Procedure M-0050 was replaced by Maintenance Procedure 1-

MMP-25.01, Revision 0, "Containment Purge Valve." The reference in 1-MMP-25.01 for the Vendor Manual had been changed to 8770-8717 as required to reflect PC/M 95085.

The original PC/M was canceled on January 31, 1997. The PC/M was sent back to engineering for evaluation because the PC/M needed to be re-approved for installation in the plant. The re-approved PC/M was sent to FRG for approval. Strengths in the current change process and the interface with the configuration management group were demonstrated by the events surrounding this PC/M. Specifically, the MEP was originally evaluated by engineering in March 1996 for accomplishment during Outage 14. The engineering evaluation included a 10 CFR 50.59 screen that determined a 10 CFR 50.59 evaluation was not required. During the final planning for the outage, a decision was made to not accomplish this change during Outage 14. The MEP was subsequently canceled. After Outage 14, a decision was made to reschedule PC/M 95085 for Outage 15. The Configuration Management (CM) supervisor forwarded the MEP to engineering for another evaluation and approval for accomplishment for Outage 15. This was done even though the expiration date on the MEP had not been reached. Engineering performed another design integration review and concluded the MEP was satisfactory to be accomplished as written.

c. Conclusions

Based on this review, the inspectors concluded that this MEP was satisfactorily dispositioned and that the re-evaluation prior to implementation was a strength.

E1.7 Steam Generator Blowdown piping

a. Inspection Scope (37550)

PC/M 156-193, Revision 3, Supplement 1, dated July 24, 1997, provided a modification to the 1B steam generator blowdown piping. The modification was required because the replacement steam generator has two blowdown nozzles vice the single nozzle on the original steam generator. NRC Generic Letter 87-11 was used as a basis to eliminate intermediate break locations in determining intermediate rupture restraints.

b. Observations and Findings

Calculation PSL-1MHC-94-010, Revision 4, dated December 15, 1997, was reviewed. This review focused on the methodology and basis employed in the calculation to eliminate intermediate break locations from consideration as allowed by NRC Generic Letter 87-11. It was determined that none of the piping in the steam generator blowdown piping modification would be subjected to a stress level that would require analysis for intermediate pipe breaks. The inspectors confirmed that the blanket insulation installed for the steam generator blowdown modification was analyzed and found to not adversely affect Emergency

Core Cooling System Net Positive Suction Head from the standpoint of containment sump blockage.

A review of various drawings affected by PC/M 156-193, a modification to the 1B steam generator blowdown piping, indicated that Drawing 8770-G-094, Revision 11, "Flow Diagram Secondary Side Wet Layup System Feedwater Heaters Tube Side," did not show valve V23125. An additional review of this drawing revealed that valve V23100 was also not shown. V23100 is a corresponding valve in the 1A steam generator piping affected by PC/M 155-193. This particular drawing is not the primary flow diagram for the blowdown piping configuration, and the drawing does contain a note that some information is provided for reference only. In discussions with the engineering staff, the licensee agreed that the missing valves posed a possible concern and DCR 980104 was drafted to address the matter.

c. Conclusions

Based on this review, the inspectors concluded this PC/M was dispositioned satisfactorily.

E1.8 Intake Cooling Water Pump Pipe Support

a. Inspection Scope (37550)

PC/M 97-010 Engineering Package (MEP) 97-010, Revision 0, Supplement 0, addressed work on pipe support ISH-3 on Unit 1 Intake Cooling Water Pump 1B discharge line to correct a corrosion condition under the support.

b. Observations and Findings

Calculation CW-0963, Revision 3 was reviewed by the inspectors. This calculation reanalyzes the ICW piping as a result of relocating the vertical support function of ISH-3 to ISH-3A as well as the relocation of a vertical function load for ISH-10 as a result of another PC/M (186-191). The assumptions and methodology were reviewed by the inspectors and appeared to be satisfactory. The calculation demonstrated that the total stresses resulting from the relocation of the vertical support loads are within the stress requirements of the ASME Code and the UFSAR.

c. Conclusions

Based on this review, the inspectors concluded this PC/M was dispositioned satisfactorily.

E1.9 Surge Line Rupture Restraints (37550)

PC/M 207-193 Engineering Package (EP) 207-193 changed two surge line rupture restraints (RC-30 and RC-31) to eliminate interference with the pipe cutting and welding tools needed for the 1B steam generator replacement. Calculation PSL-1MHC-94-003, Revision 4 was reviewed. This calculation addressed the acceptability of modifying rupture

restraints RC-30 and RC-31. Based on this review, the inspectors concluded this PC/M was dispositioned satisfactorily.

E1.10 Event Response Team (ERT) Activities

a. Inspection Scope (37550) (37551)

The inspectors reviewed ERT activities pertaining to the loss of two, Unit 1 electric pump motors during a storm on June 8, 1998.

b. Observations and Findings

During a thunderstorm on June 8, two Unit 1, 4160 volt, circuit breakers tripped causing the loss of two pumps. At 3:34:47 a.m. the breaker for the 1B2 Circulating Water Pump (CWP) tripped, and at 4:02:43 a.m. the breaker for the 1B Heater Drain Pump (HDP) tripped. After the CWP trip, the operators reduced power to approximately 98 percent power. When the HDP tripped, power was further reduced to approximately 85 percent.

A review of the Operations log showed that at the time of the HDP trip, the operators were also coping with the loss of a number of other electrical components, such as pressurizer heaters, battery charger, a portion of the control room lights, and assorted instrumentation. The licensee established an event response team (ERT) to oversee troubleshooting activities, to conduct damage assessment, and to determine the root cause or causes of the loss of the electrical components.

Initial troubleshooting activities, using a ground test device, showed that the pump motors had sustained internal damage, and the associated circuit breaker contacts showed evidence of overcurrent, including contact pitting. The damaged motors were transported to an off site repair facility for examination and repair. The 1B2 CWP motor was repaired and returned to the site, and the 1B HDP was replaced with a spare motor from the site warehouse.

The troubleshooting activities also determined that the remaining electrical problems were associated with an undervoltage condition. A review of voltage records showed that at 3:34:47 a.m. the AC pattern on the 1B2 bus was interrupted for greater than two cycles, and at 4:02:43 a.m., the interruption was greater than four cycles. The four cycle interruption in the AC signal was sufficient for a number of protection devices to react to a perceived undervoltage condition.

The inspectors reviewed the activities of the ERT through attendance at team meetings, discussions with team members, and independent review of the data and logs from the event. The inspectors agreed with the ERT's finding that the overcurrent damage (i.e., the lightening damage) appeared to be limited to the two pump motors and their associated breakers.

c. Conclusions

The licensee's event response team for the June 8 storm damage did a good job of chronicling and evaluating equipment problems which challenged the Unit 1 operators.

E2 Engineering Support of Facilities and Equipment

E2.1 Temporary Modifications

a. Inspection Scope (37550, 37001)

The inspectors reviewed temporary modifications to ensure they were properly documented, were justified from an engineering standpoint, and were evaluated for compliance with 10 CFR 50.59.

b. Observations and Findings

In response to a request for a list of temporary alterations, the licensee provided a list of Temporary System Alterations (TSA) installed using Procedure AP 0010124. The number of active TSA's were small; four for Unit 1, and seven for Unit 2. The inspectors identified numerous other techniques for making temporary modifications to the facility including: Minor Scope Non-Nuclear Safety Plant Changes in Support of Maintenance (MSC), a means to make changes associated with Condition Reports (CRs), equipment installed by temporary procedures known as Letters of Instructions (LOIs), non-compliances approved under the guidance of Generic Letter 91-18, and temporary scaffolds installed for access to equipment with removal dates tracked by the plant Plan of the Day (POD). The temporary alterations reviewed were adequate from an engineering standpoint and properly evaluated for compliance with 10 CFR 50.59.

The inspectors noted there were at least two MSCs for video cameras and monitors installed as a man-hour and man-rem reduction process for constant monitoring of plant locations with unqualified Thermolag fire barriers. These MSCs were installed as a result of an NRC Fire Protection Inspection finding that the affected areas did not have adequate fire barriers nor were they constantly monitored. The MSCs reviewed were CR 98-0586 and CR 98-0606 for Unit 1 and Unit 2 respectively.

c. Conclusions

The number of temporary modifications was not excessive for a two unit installation with both units in operation. Numerous adequate techniques were used to approve and control temporary plant modifications.

E3 Engineering Procedures and Documentation

E3.1 Engineering Procedures (37550)

The inspectors reviewed corporate level engineering quality instructions as noted in Appendix A of this report. The procedures were well written but were not very detailed. This was deemed acceptable based on the experience level of site personnel. The products reviewed during the course of the inspection were found to be generally consistent with the procedures. The site specific and corporate procedures reviewed were adequate for a well trained and knowledgeable staff.

E3.2 Vendor Manuals

a. Inspection Scope (37550)

The inspectors reviewed Procedure ENG-QI 3.3, "Vendor Technical Manual Control," and its implementation to ensure current vendor information was used for plant operation and maintenance.

b. Observations and Findings

ENG-QI 3.3, Section 5.8, requires periodic contact with key component suppliers of safety related components, but the period was not specified. Vendor manuals associated with NSSS equipment are not included in the periodic reviews because the NSSS vendor automatically informs the licensee of required changes. The licensee conducted a self assessment after the last review and identified several corrective actions, including the requirement for Engineering to review and take appropriate action within 90 days of receipt of new vendor information.

c. Conclusions

The Vendor Technical Manual Control Procedure, ENG-QI 3.3, was adequate with a weakness identified. It did not contain guidance on how often Vendor contact should be initiated.

E3.3 Review of 10 CFR 50.59 Process

a. Inspection Scope (37001)

The inspectors reviewed Nuclear Engineering QI, ENG-QI 2.1, Revision 3 which governs the screening process. The inspectors also reviewed the subsequent 10 CFR 50.59 evaluation and several completed screenings and evaluations as noted below.

b. Observations and Findings

The procedure is used to determine if a change, test, or experiment requires NRC approval prior to implementation. The Design Basis Group

is accountable for providing independent reviews of 10 CFR 50.59 screenings and evaluations. The inspectors reviewed the following documents with 10 CFR 50.59 screenings and no evaluation:

- PC/M 95-085 (MEP)
- PC/M 97-058 (MEP)
- PC/M 97-010 (MEP)
- PC/M 95-086 (MEP)
- PC/M 97-060 (MEP).

The inspectors also reviewed PC/M 156-193 (EP), and PC/M 207-193 (EP) which had 10 CFR 50.59 evaluations. Stand Alone 10 CFR 50.59 Evaluation PSL-ENG-SEMS-97-104 was also reviewed.

c. Conclusions

The 10 CFR 50.59 screenings and evaluations reviewed by the inspectors were found to be adequate.

E3.4 Steam Generator Replacement Project (SGRP) Documentation (Unit 1) (37550) (50001) (50002)

The inspectors reviewed the records storage area for the retention of the Unit 1 SGRP documentation. Selected records were reviewed to determine compliance with the Steam Generator Team (SGT) Quality Execution Procedures (QEPs). The inspectors also verified that the contract between the licensee and SGT required quality related activities, such as welding, to be accomplished in accordance with the SGT program as approved by FPL, and therefore the existing FPL maintenance welding program procedures did not apply to the SGRP. The records for the SGRP were found to be well controlled.

E4 Engineering Staff Knowledge and Performance

E4.1 Knowledge and Performance

a. Inspection Scope (37550)

The inspectors reviewed selected documents that were products of the engineering department staff including calculations and evaluations.

b. Observations and Findings

Discussions were conducted with various engineering personnel including design engineers, engineering supervisors, and the Chief Mechanical Engineer. Topics that were discussed included hydraulic analysis for various AFW calculations, considerations for assessing the potential for vortex flow in the AFW Net Positive Suction Head (NPSH) calculations, and aspects of the stress analysis for a pipe support. The I&C lead engineer, the three I&C design engineers, and the I&C System engineers were knowledgeable of corporate and site procedures. They were aware of most current nuclear power related I&C issues, including digital I&C

equipment computer software issues and their susceptibility to electromagnetic interference (EMI) and radio frequency interference (RFI). There was some lack of awareness of the other aspect of electromagnetic compatibility which was the effect on existing equipment from EMI/RFI emissions from the new digital equipment.

c. Conclusions

Based on reviews conducted during this inspection, the inspectors determined that licensee engineering personnel are experienced and possess good technical and plant knowledge. This personnel knowledge includes a good understanding of the engineering processes and organizational interfaces involved in controlling, maintaining, and supporting the operating plant.

E7 Quality Assurance in Engineering Activities

E7.1 Assessments

a. Inspection Scope (37550)

The inspectors reviewed selected Engineering Department assessments to evaluate the effectiveness of the licensee's controls related to engineering activities.

b. Observations and Findings

The inspectors reviewed the Engineering Department assessments listed in Appendix A of this report. The assessments reviewed were of good depth and self-critical. The majority of the assessments were reactive in that they were reviews of past activities. The inspectors discussed the results of the assessments with the licensee's staff. Proactive assessments of work in progress were being planned by the licensee.

c. Conclusions

The inspectors concluded that the licensee was actively engaged in self-assessments and that the assessments were identifying program enhancements, which the licensee was implementing. These assessment activities were viewed as a strength by the inspectors.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) IFI 50-335/96-201-01, "CST Volume Requirements" (92903)

This item addressed issues related to the adequacy of the current Technical Specification requirement to maintain a minimum quantity of water in the Condensate Storage Tanks (CST). Calculation PSL-1FSM-97-032, Revision 0, dated January 30, 1998, FPL 10 CFR 50.59 Evaluation PSL-ENG-SEMS-97-104, Revision 0, "Condensate Storage Tank Volume Design Basis Review," and St. Lucie Unit 1 CST Sizing Calculation, PSL-1FJF-97-132, Revision 0, approved December 4, 1997, were reviewed and supported

the adequacy of the current TS requirement on CST volume. This item is closed.

E8.2 (Closed) IFI 50-335/96-201-02, "Calculations and Indication for AFW Flow" (92903)

The item addressed issues related to the use of inputs to the current design basis calculations that assume higher AFW flows than originally designed. Selected documentation associated with the licensee closure of this item relative to the AFW flow calculation was reviewed. This documentation included PMAI PM 96-12-106, "Revise the Ref 2 Calculation to Include Flow Delivery Information for the 1C Steam Driven AFW Pump," calculation PSL-1FSM-97-002, Revision 0, "Steam Driven Auxiliary Feedwater Pump Flow Determination,", and Engineering Evaluation JPN-PSL-SEFJ-96-050, Revision 0. The design basis AFW flow was increased to an extent that the control room indicators used for RG 1.97 compliance did not meet the required 0 to 110 percent of design flow range. The inspectors reviewed PC/M 97-026 - "AFW Flow Indication Range Change." The instrument loops were modified to indicate 0 to 500 GPM for the motor driven AFW pump flows and 0 - 1000 GPM for the turbine driven AFW pumps. The inspectors noted the revised instrument indicators, including range and scale divisions, were adequate for normal and accident conditions, and were adequate from a human factors perspective. This item is closed.

E8.3 (Closed) IFI 50-335/96-201-03, "AFW Crosstie NPSH" (92903)

The item addressed the need to revise calculations for net positive suction head (NPSH) for Unit 1 AFW pump operation using the Unit 1 and Unit 2 CST. Selected revised calculations and documentation associated with this item were reviewed. The inspectors reviewed calculation PSL-1FSM-97-024 and calculation PSL-1FSM-97-025 and concluded the calculations were adequate. This item is closed.

E8.4 (Closed) IFI 50-335/96-201-04, "Calculation Revision for AFW Piping Supports" (92903)

This item addressed the leaking containment check valves by increasing the frequency of testing AFW check valves every outage. The Auxiliary Feedwater Periodic Test Procedures, 1-0700050, Revision 63, and 2-0700050, Revision 49, were reviewed by the inspectors. The procedure had been revised to reflect the increased frequency to once per operating cycle. The inspectors reviewed CR 96-2063, Supplement 1, Final Engineering Disposition. The supplement contained the results of the evaluation of the elevated temperature on the AFW discharge piping. The evaluation determined that the piping was operable at elevated temperatures. However, additional modifications to the piping supports may be required. Until the supports are modified, the licensee had initiated compensatory measures to ensure the piping remains full. This item is closed.

E8.5 (Closed) IFI 50-335/96-201-06, "Full Flow Testing of AFW Crosstie" (92903)

The item addressed issues related to lack of a documented full flow test of the AFW crosstie when the Unit 1 AFW pumps are taking suction on the Unit 2 CST and the lack of including the piping and valves in the AFW crosstie in the ASME XI ISI/IST program. Selected documentation associated with the licensee closure of this item was reviewed including Procedures AP 1(2)-0010024 and OP 1(2)-0010125A. These documents update the ASME Section XI IST program and the surveillance program to include valves in the AFW crosstie. Procedure LOI-0-85, Revision 0 was reviewed. This procedure addressed flow testing of the crosstie between the Unit 1 and Unit 2 CST. The inspectors review identified that the important valves in the AFW crosstie used to supply Unit 2 CST to the Unit 1 AFW pumps had been included in the IST program, the associated piping was not included in the ISI program. There is a formal evaluation documenting the decision to exclude the piping from the ISI program. This item is closed.

E8.6 (Closed) IFI 50-335/96-201-09, "Lack of Tracking for Unidirectional Drift" (92903)

This item addressed a failure to track unidirectional drift readings as mentioned in Information Notice (IN) 89-68 "Evaluation of Instrument Setpoints During Modification." The licensee determined tracking was not necessary for several reasons, but the primary one was their approved quality related procedures relied on the integrity of vendor Appendix B QA programs. If the vendor noted instrument variances identified in vendor documents as random drift should become non-random, then the vendor would be required to make this fact known under 10 CFR 21 or other means such as technical bulletins. The inspectors determined there was no requirement to establish a program to track unidirectional drift, and determined the existing procedures were adequate to deal with such an event. This item is closed.

E8.7 (Closed) IFI 50-335/96-201-10, "Lack of Loop Accuracy Calculations for Indication Only Instruments" (92903)

This item concerned not having loop accuracy calculations for indication only instruments such as the AFW flow indications used for RG 1.97 compliance. The licensee issued PSL-ENG-SEIS-98-022, "Uncertainty Calculation Program for EOP and Indication Only Instrument Loops," which included an evaluation of all safety related instrument loops and specified which loops required uncertainty calculations. This item is closed.

E8.8 (Closed) IFI 50-335/96-201-12, "Lack of Maintenance Procedures for Changing Panel Filters" (92903)

The inspectors reviewed the PMAI 97-06-052, which required PM change requests to be generated to change the filters on the shutdown panels. The inspectors reviewed PM 96032726 01 2A/B Steam Generator Pressure and

970167 74 01 TS/FYP8095/P-08-1A/B Hot Shutdown Control Panel (HSCP) Pressure. Both procedures had been revised to include a step to inspect, clean, and replace the door filters as necessary. This item is closed.

E8.9 (Closed) IFI 50-389/96-201-013, "CCW Performance Curves" (92903)

This item addressed issues related to the need for new performance curves for the Unit 2 Component Cooling Water (CCW) Heat Exchanger (HX). Selected documentation associated with the licensee closure of this item was reviewed. A memo from C. Bible to H. Johnson (ENG-SPSL-97-0277) forwarded a set of revised ICW Performance Curves for St. Lucie Unit 2 (generated by Calculation PSL-2FJM-96-001, Revision 1). Also, Procedure OP 2-0640020, Revision 38 was reviewed. Selected figures in the procedure were spot checked and compared to the figures developed in Calculation PSL-2FJM-96-001, Revision 1. The spot check indicated that the current procedure had been updated to include the revised curves. This item is closed.

E8.10 (Closed) IFI 50-389/96-201-14, "Operations Night Orders for Using Performance Curves" (92903)

The licensee issued PMAI 96-12-132 to move the operating curves from the night orders to the appropriate procedures. The inspectors reviewed Procedures OP 2-0010123, Revision 12, "Schedule for Periodic Tests, Checks, and Calibrations," OP 2-00-10123A, Data Sheet-43, Revision 12, "Surveillance Data Sheets," and OP 2-0640020, Revision 37, "Intake Cooling Water System Operation." The procedures had been revised to include the operating performance curves from the night orders. This item is closed.

E8.11 (Closed) IFI 50-389/96-201-15, "Lack of CALC for CCW Rad Monitor Setpoints" (92903)

No formal calculations validated the UFSAR specified setpoints for the CCW radiation monitor used to detect RCS to CCW heat exchanger leaks. The licensee performed calculations to determine the CCW system volume as well as the loop transit time. Appropriate conservative measures were used in the analysis, such as assuming the leakage was instantly diluted by the CCW system, and the RCS activity was significantly lower than the design basis values. This item is closed.

E8.12 (Closed) EA 50-335/96-457/03013, "Failure to Control the Design Process According to 10 CFR 50 (92903)

The inspectors reviewed the licensee's corrective actions for this violation as contained in the licensee's letter dated February 6, 1997. The following documents were reviewed and items noted:

- Work Order 96019259-01 was used to correct the leads.
- QI 1.7, Revision 3, "Design Input/Verification, was modified to

- QI 1.7, Revision 3, "Design Input/Verification, was modified to ensure that the same level of verification would be applied to design inputs for packages duplicated from another facility. The revision also included a requirement for engineering personnel who prepare and verify design inputs to receive both initial and periodic training on the design and verifications process.

- PMAI Corrective action form 96-08-248 corrected the BEACON geometry file for the core midplane.

- PMAI Corrective action form 96-10-103 addressed the training of engineering department personnel.

- PMAI Corrective action form 96-08-228 addressed the critical elements of verifying the cable connections.

- PMAI Corrective action form 97-02-069 eliminated the Axial Flux Offset work around due to the upward shift in the core midplane.

- PMAI Corrective action form 96-09-108 revised the fuel design standard to require revalidation of these key reload nuclear design and safety analysis assumptions. Also, the PMAI strengthened the independent verification of the fuel design standard to require a design review meeting for any fuel design changes for the design model being developed. This included axial shifts or dimensional changes.

- Condition Report 96-1907 reviewed the as found conditions with respect to the core parameters and determined that the Axial Shape Index change caused by the error in core midplane was within the available margin.

Based on the above review, the inspectors concluded that the licensee's corrective actions were adequate. This item is closed.

E8.13 (Closed) IFI 50-335,389/97-10-02, "Completion of Corrective Actions for Condition Report 97-1422 Regarding Plant Drawing Revisions" (92903)

During the replacement of the Nuclear Instrumentation drawers in the Reactor Protection Cabinets, a design change issued by the vendor was not incorporated into the plant drawings. The vendor issued a letter to the licensee indicating that the Log Rate Amp Cards were being revised. The revised cards were expedited to the site and installed. Engineering justified the replacement of the Log Rate Amp cards with a note that new drawings would be received from the vendor. The vendor never transmitted revised drawings and instruction manual documents. Therefore, the drawings for the Log Rate Amp cards were never revised to the correct revision. The licensee issued CR 97-1422 to investigate the issue and update the drawings. PMAI 97-08-053 was issued to review the CRNs, drawings, and manuals for the PC/M 008-295. The inspectors

reviewed the corrective actions for CR 97-1422 and PMAI 97-08-053. The corrective actions were completed on November 29, 1997. One additional CRN was issued to resolve a configuration discrepancy. This item is closed.

E8.14 (Closed) VIO 50-335/97-06-07, "Inadequate Troubleshooting Documentation" (92903)

A scope change had been made to a NPWO that did not provide adequate details for testing and troubleshooting activities. The licensee's response was reviewed by the inspectors. The corrective actions included issuing a troubleshooting procedure, clarifying the administrative controls of scope changes on NPWOs, and providing training for the maintenance supervisors and technical support personnel. The inspectors reviewed The licensee's self assessment of this event. The self assessment determined that additional details would have provided greater consistency of performance from shift to shift and the level of detail was only satisfactory due to the high level of technical oversight provided for the specific evolution. The licensee issued Procedure GMP-21, Revision 0, "Troubleshooting Process," and revised ADM-0010432, Revision 13, "Control of Plant Work Orders," to define details for troubleshooting activities and to define what constitutes a scope change to an NPWO. Based upon the above actions, the inspectors concluded that the corrective actions for this item were adequate. This item is closed.

E8.15 (Closed) LER 50-389/98-003-00, "Containment Pressure Instrumentation Design Single Failure Vulnerability" (92903)

This LER documented a single failure concern with the containment pressure input signals to the Unit 2 RPS and ESFAS systems. Containment pressure input signals to RPS and ESFAS are provided by four pressure transmitters located outside containment. Each transmitter has a dedicated containment penetration with a normally energized solenoid valve in its process sense line. Power for the MA/MC and MB/MD solenoids is provided from the SA and SB - DC buses respectively. With two isolation valves supplied from the same power circuit, and a design that the valves fail closed on loss of power, a single failure may be postulated that will cause a loss of two redundant containment pressure measurement channels. Loss of two containment pressure channels could prevent actuation of the protective system when in a two-out-of-three configuration.

The Unit 2 RPS and ESFAS systems are licensed as two-out-of-three protection systems with an installed spare channel. The basis for the licensed configuration is that these systems are designed to meet single failure criterion with three channels in service. Since the fourth channel is considered an installed spare, Technical Specifications allow a failed channel to be placed in bypass for an extended period of time. The single failure concern described above invalidates the basis for indefinite bypass as allowed by the Technical Specifications.

The cause of this event was that the design of the containment pressure instrumentation did not meet the channel separation and independence requirements of IEEE Standard 279-1971 due to cognitive personnel error on the part of the original designers.

The licensee had implemented corrective actions to ensure that the containment pressure inputs remained available to RPS and ESFAS. These corrective actions included: the immediate removal of the RPS and ESFAS containment pressure bypass keys from the control room and securing the keys in the plant manager's safe; applicable changes to surveillance procedures were made to prohibit use of the bypass key for containment pressure bistable testing; and a review of all Unit 2 instrumentation lines was completed to ensure that this condition was isolated to the design of the containment pressure instruments. Additionally, long term corrective actions will be accomplished during the next Unit 2 outage by replacing the valves with fail open or as-is valves.

Criterion III of 10 CFR 50, Appendix B states: "Measures shall be established to assure that applicable regulatory requirements and the design basis, as defined in part 50.2 and as specified in the license application, for those structures, systems, and components to which this appendix applies are correctly translated into specifications, drawings, procedures, and instructions." Contrary to the above, Unit 2 had a single failure vulnerability with respect to the containment pressure inputs to the RPS and ESFAS systems due to a discrepancy between the plant design and the specifications and procedures. This is a violation for which the NRC is exercising discretion per Section VII.B.3 of the NRC Enforcement Policy and therefore a Notice of Violation will not be issued. This LER is closed.

E8.16 (Closed) VIO 50-335/97-13-01, "No Travel Limit Markings On The Top And Bottom Of One Of The Main Girders Of The Temporary Lifting Device" (92903)

This issue involved a failure to identify the travel limits for the overhead crane which was used to lift the steam generators during the steam generator replacement outage. The work package controlling the lifting of the steam generators required that travel limits be marked such that they could be visible to the person in charge on the floor as well as the crane operator. The inspectors determined that the markings were not properly applied and were not visible as required by the procedure.

The licensee subsequently marked the crane properly before further steam generator moves were made. In addition, the licensee provided additional oversight of the contractors performing the work. Training was also provided to contractor and FPL personnel which discussed procedural and work package compliance. This violation is closed.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Review of Plant Chemistry Parameters (84750)

The review was made to verify primary water chemistry control parameters were within applicable limits. The inspectors reviewed licensee trending information concerning various primary chemistry parameters and discussed the performance of the monitoring program with Chemistry Department personnel. Overall, the primary water chemistry control parameters were maintained well within the applicable Technical Specifications (TS) and procedure limits.

R1.2 Annual Radiological Effluent Release Report

a. Inspection Scope (84750)

The report was reviewed to verify reporting requirements were met and to review the licensee's efforts to minimize radiological effluents.

b. Observations and Findings

With the exception of a small increase on Unit 2 in 1997, noble quantities released have continued to decline since 1995. The licensee was not fully utilizing the radioactive waste treatment facilities in 1995. To further reduce the radiological effluents, the licensee began better utilization of the Gas Decay Tanks to take advantage of radioactive decay. As a result, the licensee has seen reduced gaseous effluents. The total radioactive gas quantities released from the site were approximately 386, 51, and 47 curies in 1995, 1996, and 1997 respectively. The licensee had established gaseous effluent goal of 20 curies/unit for 1997 and the licensee retained the same goal for 1998. Through May 1998, the actual curies released were less than one curie for each unit.

There were unplanned gaseous releases in 1996 and 1997. However, the releases from the gas decay tanks were monitored. The inspectors reviewed the licensee's corrective actions following those releases and found they were appropriate for both events.

Liquid effluents in 1996 and 1997 were well within effluent release limits. With the exception of tritium, the liquid effluents also declined during the 1995 to 1997 period.

c. Conclusions

The annual radiological effluent report met applicable requirements and no adverse trends were identified. All radiological effluents were well within release limits.

The licensee establish the first effluent goals in 1997 and was directing resources to optimize operations of the gas decay system to minimize gaseous radiological effluents.

R3 Radiation Protection and Chemistry Procedures and Documentation

R3.1 Radioactive Waste Processing and Transportation of Radioactive Material

a. Inspection Scope (86750) (71750)

The inspectors reviewed licensee procedures and documentation for transporting radioactive waste and radioactive materials.

b. Observations and Findings

The inspectors reviewed licensee documentation for shipments of radioactive waste and radioactive materials to verify the licensee was meeting applicable requirements specified in licensee procedures, Department of Transportation, and NRC regulations.

The disposal of the Unit 1 original steam generators (SGs) and a shipment of solidified radioactive waste were closely examined. The disposal of the original SGs required coordination of several companies and government agencies. The process was very well planned and the generators were prepared for transport, stored, transported, and disposed of in accordance with those plans.

In the last Unit 1 refueling outage, the licensee repaired pressurizer heater sleeves. The waste generated in the process was tested and analyzed and solidified in accordance with approved Process Control Procedures.

The inspectors randomly selected other shipments of radioactive waste and radioactive materials and reviewed the licensee's documentation for those shipments. The inspectors found the licensee's classifications were appropriate. Shipping papers, radiation surveys, vehicle inspections, package handling and loading, and notification forms were properly completed and maintained. Recipient licenses and package certifications were also reviewed.

Title 10 CFR Part 61 required licensee's transporting radioactive waste to land disposal facilities to periodically characterize the various radioactive waste streams. The responsibility for characterization activities had been transferred to the site from licensee corporate offices. A site approved procedure controlling the process was recently issued. The inspectors verified that the waste streams had been sampled and characterized. The licensee's waste stream characterizations and processes were appropriate.

In discussions with the staff throughout the inspection, the inspectors found the licensee's transportation staff knowledge of applicable transportation requirements.

During the Unit 1 SG replacement project in 1997, the licensee had a large inventory of contaminated material and equipment and low level radioactive waste on site. At that time the material was stored and staged through the yard areas within the radiation control area. Following the outage, the licensee applied sufficient resources to reduce the quantities of contaminated tools, equipment, and materials in the RCA yard areas. As appropriate, the materials were decontaminated, properly stored, returned, or disposed of as radioactive waste. As a result, the yard areas were tidy and relatively free of contaminated materials.

c. Conclusions

The licensee's planning and coordination for the transport and disposal of the original SGs was very good. Radioactive waste and radioactive material shipping documentation and records were properly completed. Licensee radioactive waste streams were properly characterized.

Staff responsible for the preparation and transportation of radioactive materials and radioactive waste were very knowledgeable of the applicable transportation requirements.

Licensee efforts in reducing and controlling the quantity of contaminated materials on site following the SG replacement project were good.

R8 Miscellaneous Radiation Protection and Chemistry Issues

R8.1 (Closed) VIO 50-335,389/97-13-03, "Failure to Have Adequate Procedures for Issuance of Tele-Dosimetry" (83750, 92904)

The licensee did not have procedures that would ensure the dose limit setpoints applied in tele-dosimetry monitoring systems were in agreement with the limits established on the applicable radiation work permits.

In addition to immediate corrective actions, the licensee developed a tele-dosimetry issuance procedure. Health Physics (HP) Procedure HPP-16, "Operation of the Teledose System," was issued in March 1998. The licensee provided training on the procedure to the HP staff. The licensee also increased the frequency and enhanced the level of training on the use of tele-dosimetry for the HP staff. Licensee corrective actions for the violation were appropriate and complete. This item was closed.

S1 Conduct of Security and Safeguards Activities

S1.1 Compensatory Measures

a. Inspection Scope (81700)

The inspectors determined if compensatory measures were initiated by the

licensee that were equal or greater than the equipment or security process that was degraded.

b. Observations and Findings

The inspectors reviewed Security Information Reports (SIRs) for the period of April to present to determine the number and location of compensatory measures implemented during that time period.

During the course of the inspection, the security system failed and compensatory measures were implemented to support a total system failure. Section 3.1.4. of the Physical Security Plan (PSP) outlined the compensatory measures to be taken by the licensee in the event of a total system failure. The inspector toured the compensatory measures in place at the time of the degradation. All compensatory measures observed were within the provisions of the PSP.

c. Conclusions

Through record review and observation of compensatory measures in place at the time of the inspection, the inspectors determined that the licensee was in compliance with the PSP.

S2 Status of Security Facilities and Equipment

S2.2 Protected Area Access Control - Personnel

a. Inspection Scope (81700)

The inspectors determined if the licensee's access control program effectively removed terminated individuals' unescorted access to protected and vital areas.

b. Observations and Findings

The PSP, Revision 52, dated May 1, 1998, required the licensee to inactivate a favorably terminated individual's unescorted access within 48 hours from notification.

In response to violations issued in 1996 and 1998, the licensee modified their access control program. Additional oversight and verification had been put in place to ensure that procedures to remove individuals' unescorted access were closely followed. Procedures were standardized so that either the badging office or the Secondary Alarm Station (SAS) could process access terminations in the same manner. Additionally, procedures required that after 30 days of non-use, an individual's keycard capability will be removed.

The inspectors reviewed 15 randomly selected access control records of individuals who had been favorably terminated between March 1998 to present. The inspector compared those records with the data which was currently in the security computer. All records reviewed reflected that

security was notified in a timely manner and that individuals' keycard and hand geometry capabilities were removed within 48 hours, as required by the PSP.

c. Conclusions

The inspectors concluded that the licensee's access control program had been modified and improved. Records reviewed met the requirements specified in the PSP.

S2.4 Testing and Maintenance

a. Inspection Scope (81700)

The inspectors ascertained that testing and maintenance of security related equipment was completed as required by the PSP.

b. Observations and Findings

The PSP required the licensee to operability test security related equipment once every seven days. Security Force Instruction (SFI) 3, "The Electronic Security Section," dated June 15, 1998, Appendix E, outlined the licensee's operability testing process, which assured that security equipment was functional for use.

The inspectors reviewed operability test records for the period of May 24 through June 14, 1998, to determine if the licensee was conducting operability testing on required equipment and in the required timeframe. All records reviewed indicated the licensee was conducting the operability tests in accordance with the PSP and SFI 3 once every seven days as required.

The inspectors also reviewed the latest Trouble Report. The Trouble Report is a listing of security related equipment that is in need of repair. These repairs were completed by a dedicated maintenance team. Due to the dedicated team, the inspector found the turnaround time for repairs to security related equipment to be minimal.

c. Conclusions

The licensee was conducting testing and maintenance for security related equipment as required by the PSP and implementing procedure.

S2.5 Vehicle Barrier System

a. Inspection Scope (81700)

The inspectors verified that the Vehicle Barrier System (VBS) remained in place and operational as required by the PSP.

b. Observations and Findings

On May 5, 1998, the inspector performed a walkdown of the VBS. Exterior concrete filled bollards were in place and appropriately spaced less than three feet apart. Other passive barriers in place; airline cable, natural water and land structures, and jersey bouncers were in place and appropriately anchored. Active barriers were operational and in good working condition, as evidenced by minimal problems since the last inspection.

The inspectors reviewed VBS inspection records conducted during the period from February 21 through May 18, 1998, as well as daily checks performed by the perimeter patrol. All records reflected the licensee was performing inspections as required.

c. Conclusions

Both passive and active barriers of the VBS were in place and operational as required by the PSP.

S3 Security and Safeguards Procedures and Documentation

S3.1 Security Program Plans

a. Inspection Scope (81700)

The inspectors evaluated the latest PSP and Contingency licensing changes to determine if the conditions of 10 CFR 50.54(p) were met and that the changes did not decrease the effectiveness of the plan.

b. Observations and Findings

The inspectors reviewed PSP Revisions 48-52. The revisions included such changes as implementation of the VBS, badging and access terminology changes, and other administrative revisions.

The inspectors also reviewed contingency Plan (CP) Revision 11 and noted that the contingency for a land vehicle penetration had been removed. The inspector determined that the licensee's removal of the land vehicle penetration contingency from the CP was in accordance with guidance documented in Regulatory Guide 5.65, "Protection Against Malevolent Use of Vehicles at Nuclear Power Plants," dated August 1994.

c. Conclusions

The PSP and CP Revisions reviewed by the inspectors did not decrease the effectiveness of the plans and were in accordance with the provisions specified in 10 CFR 50.54(p).

S3.2 Security Procedures

a. Inspection Scope (81700)

The inspectors reviewed the circumstances surrounding Licensee Event Report (LER) 98-S02, dated April 6, 1998.

b. Observations and Findings

On March 9, 1998, the licensee experienced tornado warnings. At approximately 4:04 a.m., the Electronic Security System (ESS) failed. Due to personnel safety concerns, the licensee determined to suspend safeguards under the provisions of 50.54(x)(y). This deviation from the PSP was to delay from compensating for the loss of the ESS.

Upon review of the PSP, the inspector determined that the licensee followed the conditions specified in Section 8.4 of the PSP, "Suspending Security Measures." However, a review of the LER and Condition Report 98-0439, revealed that Administrative Procedure 17.09, "Invoking 10 CFR 50.54(x)" was not utilized. Appendix A of the procedure contained a screening document to determine if a suspension of safeguards was authorized. After licensee representative discussions, the inspectors determined that although the provisions of the PSP were followed, the licensee failed to formally invoke 10 CFR 50.54(x); therefore, ADM-17.09 was not used.

The licensee determined that although the Security Shift Supervisor and the Nuclear Plant Supervisor appropriately suspended safeguards, a miscommunication occurred. Corrective action was initiated in that the licensee clarified SFI 5, "Emergency Instruction," to ensure that the Security Shift Supervisor or designee clearly states and the Nuclear Plant Supervisors understands that a suspension of safeguards is invoked pursuant of 10 CFR 50.54(x).

This failure constitutes a violation of minor significance and is not subject to formal enforcement action.

Conclusion

The licensee's failure to utilize a procedure during the suspension of safeguards on March 9, 1998, constituted a minor violation.

S8 Miscellaneous Security and Safeguards Issues

S8.1 Actions on Previous Inspection Findings (92904)

(Closed) LER 50-335, 50-389/96-S01: Tampering with key switches on the hot shutdown control panels. This event was discussed in NRC Inspection Report 50-335, 50-389/96-16, and subsequently in NRC Inspection Report Nos. 50-335, 50-389/96-19. The licensee had determined that the additional security measures implemented in response to the tampering events of May through August 1996 and documented in NRC Inspection Report Nos. 50-335, 50-389/96-19 may be removed and documented as such.

(Closed) LER 50-335, 50-389/96-S02: Failure to terminate access of a temporary licensee employee due to lack of notification of security. Additional information is discussed in NRC Inspection Report Nos. 50-335, 50-389/96-19.

(Closed) Violation 50-335, 50-389/96-19-01 and EA 96-458 (01013): Failure to limit unescorted access to protected and vital areas during non-emergency conditions to individuals who require access in order to perform their duties. The inspectors reviewed the licensee's response dated February 6, 1997, and determined that the corrective actions were appropriate. Additional information is discussed in Section S2.2 of this report.

(Closed) LER 50-335, 50-389/98-S01: Failure to terminate access of a temporary contractor employee. Additional information is discussed in Section S2.2 of this report.

(Closed) Violation 50-335, 50-389/98-01-01 and EA 98-064 (01013): Failure to terminate two individuals' access capabilities. The inspectors reviewed the licensee's response dated April 28, 1998, and determined that the corrective action was appropriate. Additional information is discussed in Section 2.2 of this report.

(Closed) LER 50-335, 50-389/98-S02: Suspension of safeguards. The inspector reviewed the circumstances surrounding this event during the course of the inspection. Details are documented in Section S3.2 of this report.

S8.2 Protection of Safeguards Information

a. Inspection Scope (81810)

The inspectors ascertained if the licensee was protecting and storing Safeguards Information (SGI) in accordance with 10 CFR 73.21.

b. Observations and Findings

The inspectors reviewed and evaluated Administrative Procedure (AP) 0006127, "SGI Protection Program," Revision 11, dated December 29, 1997, to determine if the conditions of 10 CFR 73.21 were accurately and

completely provided. The inspectors identified a weakness in the procedure in that Section 8.3(1) specified that the combination to SGI safes were limited to those with a "need to know" yet Section 8.3(2) stated that combinations to the SGI safes will only be changed upon termination of those individuals "for cause." Therefore, individuals who leave one department or contract with another licensee and return to the St. Lucie facility may have access to the SGI safe without a "need to know." Additionally, changes to combinations were not documented to validate they had been done. The licensee was reviewing this weakness at the time of the inspection.

The inspector toured the 11 locations where SGI was currently being stored and interviewed SGI controllers. All locations were located within the protected area and were appropriately housed and locked.

c. Conclusions

The inspectors concluded that SGI was appropriately handled and stored as required by 10 CFR 73.21.

V. Management Meetings and Other Areas

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on July 1, 1998. Interim exit meetings were held on June 5 and June 10, 1998 to discuss the findings of Region based inspection. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

M. Allen, Training Manager
C. Bible, Site Engineering Manager
W. Bladow, Site Quality Manager
G. Byrd, Security Manager
D. Fadden, Services Manager
R. Heroux, Business Manager
H. Johnson, Operations Manager
J. Marchese, Maintenance Manager
C. Marple, Operations Supervisor
J. Scarola, St. Lucie Plant General Manager
A. Stall, St. Lucie Plant Vice President
E. Weinkam, Licensing Manager

Other licensee employees contacted included office, operations, engineering, maintenance, chemistry/radiation, and corporate personnel.

INSPECTION PROCEDURES USED

IP 37001: 10 CFR 50.59 Safety Evaluation Program
IP 37550: Engineering
IP 37551: Onsite Engineering
IP 50001: Steam Generator Replacement Inspection
IP 50002: Steam Generators
IP 61726: Surveillance Observations
IP 62706: Maintenance Rule Inspection Procedure
IP 62707: Maintenance Observations
IP 71707: Plant Operations
IP 71750: Plant Support Activities
IP 83750: Occupational Radiation Exposure
IP 84750: Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 86750: Solid Radioactive Waste Management and Transportation of Radioactive Materials
IP 92901: Followup - Plant Operations
IP 92902: Followup - Maintenance
IP 92903: Followup - Engineering
IP 92904: Followup - Plant Support
IP 81700: Physical Security Program for Power Reactors
IP 81810: Protection of Safeguards Information

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None.

Closed

50-335,389/97-04-02	VIO	"Routine Use of Heavy Operator Overtime" (Section 08.1)
50-335,389/97-11-01	VIO	"Personnel Violating Technical Specification Overtime Limits - Repeat Violation" (Section 08.1)
50-335,389/97-14-01	VIO	"Exceeding Technical Specification Overtime Limits - Repeat" (Section 08.1)
50-335,389/97-05-02	IFI	"Licensee Review and Clarification of Procedure (ADM-11.03) for Performing Temporary Changes to Procedures" (Section 08.2)
50-335,389/97-14-02	VIO	"Unauthorized Approval Of Overtime Exceptions" (Section 08.3)

50-335/97-05-03	VIO	"Failure To Provide Adequate Work Instructions For A Work Order" (Section M8.1)
50-389/98-004-00	LER	"Waste Gas Decay Tank Operation With No Available Oxygen Analyzers Prohibited by Technical Specifications" (Section M8.2)
50-335,389/96-13-04	IFI	"Followup on Licensee Actions to Provide Performance Criteria for Structures After Industry Resolution of This Issue" (Section M8.3)
50-335/96-201-01	IFI	"CST Volume Requirements" (Section E8.1)
50-335/96-201-02	IFI	"Calculations and Indication for AFW Flow" (Section E8.2)
50-335/96-201-03	IFI	"AFW Crosstie NPSH" (Section E8.3)
50-335/96-201-04	IFI	"Calculation Revision for AFW Piping Supports" (Section E8.4)
50-335/96-201-06	IFI	"Full Flow Testing of AFW Crosstie" (Section E8.5)
50-335/96-201-09	IFI	"Lack of Tracking for Unidirectional Drift" (Section E8.6)
50-335/96-201-10	IFI	"Lack of Loop Accuracy Calculations for Indication Only Instruments" (Section E8.7)
50-335/96-201-12	IFI	"Lack of Maintenance Procedures for Changing Panel Filters" (Section E8.8)
50-389/96-201-13	IFI	"CCW Performance Curves" (Section E8.9)
50-389/96-201-14	IFI	"Operations Night Orders for Using Performance Curves" (Section E8.10)
50-389/96-201-15	IFI	"Lack of CALC for CCW Rad Monitor Setpoints" (Section E8.11)
EA 50-335/96-457/03013	VIO	"Failure to Control the Design Process According to 10 CFR 50" (Section E8.12)
50-335,389/97-10-02	IFI	"Completion of Corrective Actions for Condition Report 97-1422 Regarding Plant Drawing Revisions" (Section E8.13)
50-335/97-06-07	VIO	"Inadequate Troubleshooting Documentation" (Section E8.14)

50-389/98-003-00	LER	"Containment Pressure Instrumentation Design Single Failure Vulnerability" (Section E8.15)
50-335/97-13-01	VIO	"No Travel Limit Markings On The Top And Bottom Of One Of The Main Girders Of The Temporary Lifting Device" (Section E8.16)
50-335,389/97-13-03	VIO	"Failure to Have Adequate Procedures for Issuance of Tele-Dosimetry" (Section R8.1)
50-335, 50-389/96-S01	LER	Tampering with key switches on the hot shutdown control panels
50-335, 50-389/96-S02	LER	Failure to terminate access of temporary licensee employee due to lack of notification of security
50-335, 50-389/96-19-01	VIO	Failure to limit unescorted access to and EA 96-458 (01013 protected and vital areas during non-emergency conditions to individuals who require access in order to perform their duties
50-335, 50-389/98-S01	LER	Failure to terminate access of a temporary contractor employee
50-335, 50-389/98-01-01	VIO	Failure to terminate two individuals and EA 98-064 (01013) access capabilities
50-335, 50-389/98-S02	LER	Suspension of safeguards

LIST OF ACRONYMS USED

ABB	ASEA Brown Boveri (company)
ACTM	Automatic CEA Timing Module
ADM	Administrative Procedure
AFW	Auxiliary Feedwater (system)
ANPS	Assistant Nuclear Plant Supervisor
AP	Administrative Procedure
ATTN	Attention
CCW	Component Cooling Water
CEA	Control Element Assembly
CEDM	Control Element Drive Mechanism
CEDMCS	Control Element Drive Mechanism Control System
CFR	Code of Federal Regulations
CIAS	Containment Isolation Actuation Signal
CP	Contingency Plan
CR	Condition Report
CRN	Change Request Notice
CWP	CEA Withdrawal Prohibit
DBD	Design Basis Document
DCR	Drawing Change Request

DDPS	Digital Data Processing System
DPR	Demonstration Power Reactor (A type of operating license)
EA	Enforcement Action
ECCS	Emergency Core Cooling System
ECO	Equipment Clearance Order
EDG	Emergency Diesel Generator
EEQ	Electrical Equipment Qualification
EM	Electrical Maintenance
EMI	Electro-magnetic Interference
EMC	Electro-magnetic Compatibility
EMP	Electrical Maintenance Procedure
ENG	Engineering
EOP	Emergency Operating Procedure
EP	Engineering Package
EQ	Environmentally Qualified
ERDADS	Emergency Response Data Acquisition Display System
ERDS	Emergency Response Data System
ERT	Event Response Team
ESAS	Engineered Safeguards Actuation System
ESF	Engineered Safety Feature
ESFAS	Engineered Safety Feature Actuation System
FCP	FSAR Change Packages
FCV	Flow Control Valve
FI	Flow Indicator
FPL	The Florida Power & Light Company
FR	Federal Regulation
FR	Flow Recorder
FRG	Facility Review Group
FSAR	Final Safety Analysis Report
GMP	General Maintenance Procedure
HDP	Heater Drain Pump
HF	Human Factors
HP	Health Physics
HPP	Health Physics Procedure
HSCP	Hot Shutdown Control Panel
HX	Heat Exchanger
ICW	Intake Cooling Water
I&C	Instrumentation and Controls
IEE	Item Equivalency Evaluation
IFI	[NRC] Inspector Followup Item
INEEL	Idaho National Engineering and Environmental Laboratory
IP	Inspection Procedure
IR	[NRC] Inspection Report
ISI	InService Inspection (program)
IST	InService Testing (program)
JPN	(Juno Beach) Nuclear Engineering
LCO	TS Limiting Condition for Operation
LER	Licensee Event Report
LOI	Letter of Instruction
M&TE	Measuring & Test Equipment
MDAFW	Motor Driven Auxiliary Feedwater
MEP	Minor Engineering Package

MMP	Mechanical Maintenance Procedure
MSC	Minor Scope Change
NCR	Non Conformance Report
NCV	NonCited Violation (of NRC requirements)
NI	Nuclear Instrument
NLO	Non-Licensed Operator
NNS	Non-Nuclear Safety Related
NPF	Nuclear Production Facility (a type of operating license)
NPS	Nuclear Plant Supervisor
NPSH	Net Positive Suction Head
NPWO	Nuclear Plant Work Order
NRC	Nuclear Regulatory Commission
NSSS	Nuclear Steam Supply System
NUMARC	Nuclear Management and Resources Council
PC/M	Plant Change/Modification
P-DCR	Plant Design Change Record
PDR	NRC Public Document Room
PMAI	Plant Management Action Item
POD	Plant Operating Diagram, Plan of the Day
PSL	Plant St. Lucie
PSP	Physical Security Plan
QA	Quality Assurance
QEP	Quality Execution Procedures
QI	Quality Instruction
QSPDS	Qualified Safety Parameter Display System
RCO	Reactor Control Operator
RCS	Reactor Coolant System
RFI	Radio Frequency Interference
RG	[NRC] Regulatory Guide
RII	Region II - Atlanta, Georgia (NRC)
RP&C	Radiation Protection and Chemistry
RPS	Reactor Protection System
RTGB	Reactor Turbine Generator Board
SAR	Safety Analysis Report
SAS	Secondary Alarm Station
SCEG	System and Component Engineering Guideline
SE	Safety Evaluation
SFI	Security Force Instruction
SG	Steam Generator
SGI	Safeguards Information
SGRP	Steam Generator Replacement Project
SIAS	Safety Injection Actuation System
SOV	Solenoid Operated Valve
SRD	Selected Record Drawing
SRO	Senior Reactor [licensed] Operator
St.	Saint
TC	Temporary Change
TCP	TEDB Change Package
TDAFW	Turbine Driven Auxiliary Feedwater Pump
TEDB	Total Equipment Data Base
TS	Technical Specification(s)
TSA	Temporary System Alteration

UFSAR	Updated Final Safety Analysis Report
USNRC	United States Nuclear Regulatory Commission
USQ	Unreviewed Safety Question
VIO	Violation (of NRC requirements)
VTM	Vendor Technical Manual
VBS	Vehicle Barrier System

Appendix A
Documents Reviewed

Engineering Quality Instructions

ENG-QI 1.0 "Design Control," Revision 7
ENG-QI 1.1 "Engineering Package," Revision 4
ENG-QI 1.2 "Minor Engineering Package (MEP)," Revision 5
ENG-QI 1.3 "Drawing Change Requests (DCR's)," Revision 3
ENG-QI 1.4 "Change Request Notices," Revision 3
ENG-QI 1.5 "Calculations," Revision 3
ENG-QI 1.6 "Discipline Standards," Revision 1
ENG-QI 1.7 "Design Input/Verification," Revision 3
ENG-QI 1.8 "Design/Operability Reference Guide," Revision 1
ENG-QI 1.9 "Equipment/Accident Interface Reference Guide," Revision 1
ENG-QI 1.12 "Environmental Qualification (EQ)," Revision 3

ENG-QI 2.0 "Engineering Evaluations," Revision 5
ENG-QI 2.1 "10 CFR 50.59 Screening/Evaluation," Revision 3
ENG-QI 2.2 "10CFR21 SSH Evaluation/Reporting," Revision 2
ENG-QI 2.3 "Operability Determinations," Revision 2
ENG-QI 2.4 "Non-Conformance Reports (NCRs)," Revision 0
ENG-QI 2.5 "Condition Reports," Revision 6
ENG-QI 2.6 "Safety Classifications," Revision 1

ENG-QI 3.4 "FSAR Updating," Revision 2
ENG-QI 3.5 "Design Basis Document (DBD) Updating," Revision 1
ENG-QI 3.6 "Total Equipment Data Base (TEDB)," Revision 2
ENG-QI 5.0 "Component/Code Activities," Revision 1
ENG-QI 5.1 "Special Processes," Revision 1
ENG-QI 6.5 "10CFR50 Appendix B Criteria Matrix," Revision 1

Change Packages

PC/M 256-183 "Unit #1 Backfit Program Excore Neutron Detector Replacement"
PC/M 94-067 "S/G Wide Range Level Loop"
PC/M 009-195 "RPS NI Drawer Replacement"
PC/M 97-018 "CEDMCS Upgrade"
PC/M 97-026 "AFW Flow Indication Range Change"
PC/M 97-047 "PASS Equipment Abandonment - Unit 1"
PC/M 151-193 "SG 1A Replacement Modification" (EP)*
PC/M 97009E "Pressurizer Heater Sleeve Nickel Plating" (EP)*
PC/M 97039 "Replacement of Radiant Energy Shields" (EP)*
PC/M 97060 "TCW Pumps Dis. Check Valves V13135 & V13153" (MEP)*
PC/M 95086 "Install Remov. Rigid Stops to Crib Cont. Purge Valves" (MEP)*

* Only reviewed abstracts

Calculations

PSL-1FSM-97-002 "Steam Driven Auxiliary Feedwater Pump Flow Determination" Revision 0
PSL-2FJI-98-001 "St. Lucie Unit 2 WR Pressurizer Pressure Uncertainty

Determination"
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