



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**  
REGION II  
245 PEACHTREE CENTER AVENUE NE, SUITE 1200  
ATLANTA, GEORGIA 30303-1257

January 30, 2013

Mr. Mano Nazar  
Executive Vice President and Chief Nuclear Officer  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, FL 33408-0420

**SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT  
05000335/2012005, 05000389/2012005 AND ASSESSMENT FOLLOW-UP  
LETTER FOR ST. LUCIE NUCLEAR PLANT UNIT 1**

Dear Mr. Nazar:

On December 31, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Nuclear Power Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on January 15, 2013, with Mr. Joseph Jensen and other members of your staff.

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

The NRC's review of St. Lucie Unit 1 performance indicators identified that the Unplanned Scrams per 7000 Critical Hours performance indicator returned to the Green performance band in the fourth quarter of 2012. The NRC had previously reviewed the performance associated with this Unit 1 performance indicator as documented in supplemental inspection report 05000335/2012009 (Agency Wide Documents Access and Management System (ADAMS) ascension number ML12321A239). The NRC concluded that all of the supplemental inspection objectives had been met. As a result, the NRC has determined the performance of St. Lucie Unit 1 to be in the Licensee Response Column of the Reactor Oversight Process Action Matrix as of the supplemental inspection report dated November 16, 2012.

One self-revealing finding and one NRC identified finding of very low safety significance (Green) were identified during this inspection.

These findings were determined to involve violations of NRC requirements. Further, a licensee-identified violation which was determined to be of very low safety significance is listed in this report. The NRC is treating these violations as non-cited violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie Nuclear Power Plant.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at the St. Lucie Nuclear Power Plant. In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). Adams is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

*/RA/*

Shane Sandal, Acting Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

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

Enclosure: Inspection Report 05000335/2012005, 05000389/2012005  
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

M. Nazar

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States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie Nuclear Power Plant.

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

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Letter to Mano Nazar from Shane Sandal dated January 30, 2013

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05000335/2012005, 05000389/2012005 AND ASSESSMENT FOLLOW-UP  
LETTER FOR ST. LUCIE NUCLEAR PLANT UNIT 1

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ROAssessment

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos: 50-335, 50-389

License Nos: DPR-67, NPF-16

Report No: 05000335/2012005, 05000389/2012005

Licensee: Florida Power & Light Company (FP&L)

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

Location: 6351 South Ocean Drive  
Jensen Beach, FL 34957

Dates: October 1 to December 31, 2012

Inspectors: T. Hoeg, Senior Resident Inspector  
T. Morrissey, Senior Resident Inspector  
R. Reyes, Resident Inspector  
R. Carrion, Senior Reactor Inspector (4OA5.3)  
J. Laughlin, Emergency Preparedness Inspector (Section 1EP4)  
G. Kuzo, Senior Health Physicist Inspector (2RS7, 4OA1)  
W. Pursley, Health Physicist Inspector (2RS6)  
S. Sandal, Senior Project Engineer (4OA3.3)  
J. Hickey, Senior Resident Inspector, Robinson (4OA2.4, 4OA3.1, and  
4OA3.2)  
P. Capehart, Senior Operations Engineer (1R11.1)

Approved by: S. Sandal, Acting Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

Enclosure

## SUMMARY OF FINDINGS

IR 05000335/2012005, 05000389/2012005; 10/01/2012 – 12/31/2012; St. Lucie Nuclear Plant, Units 1 & 2; Problem Identification and Resolution

The report covered a three-month period of inspection by the resident inspectors, including extended power uprate inspections. Additionally, the report documents inspections completed by regional inspectors in the areas of operations, engineering and health physics. Two Green non-cited violations (NCVs) were identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using IMC 0609, "Significance Determination Process" (SDP) dated June 2, 2011. Cross-cutting aspects are determined using IMC 310, "Components within the Cross Cutting Areas" dated October 28, 2011. All violations of NRC requirements are dispositioned in accordance with the NRC's Enforcement Policy dated June 7, 2012. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

### Cornerstone: Mitigating Systems

- **Green:** An NRC identified non-cited violation (NCV) of Technical Specification 6.8.1, was identified which requires that written procedures be established, implemented, and maintained covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. The licensee's procedures for seismic restraint of ladders: MA-AA-100-1008, Station Housekeeping and Material Control; QI-13-PSL, Housekeeping and Cleanliness Controls Methods St. Lucie Plant; ADM-04.02, Industrial Safety Program; and ADM-27.11, Scaffold Control, were not implemented as written on ladders that were installed near safety-related equipment. The inspectors identified four examples of ladders not seismically restrained in accordance with the licensee's procedures. During the licensee's extent of condition review, 24 additional examples of ladders not in compliance with procedure requirements were identified. The licensee's repeated failure to comply with procedures to seismically restrain ladders was a performance deficiency. Immediate corrective actions included completing a site-wide walkdown of the safety-related systems to identify and bring into procedural compliance any ladders that were not seismically restrained. The licensee entered this violation into the corrective action program as action request 1829233.

The performance deficiency was determined to have more than minor significance because if left uncorrected, the failure to comply with station procedures to ensure adequate restraining of seismically controlled ladders, could lead to a more significant safety concern. Specifically, seismically unrestrained ladders could impact safety-related equipment during a design basis seismic event. The inspectors evaluated the risk of this finding using Manual Chapter 0609 Appendix A, Significance Determination Process for Findings At-Power, Exhibit 2- Mitigating Systems Screening questions. The inspectors determined that the finding was of very low safety significance because it did not require a quantitative assessment as determined in Exhibit 2. The finding involved the cross-cutting area of human performance, in the component of resources and the aspect of complete and accurate procedures (H.2.c) in that, the licensee failed to ensure complete, accurate,

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and up-to-date procedures were available for licensee personnel to ensure ladders were restrained to prevent seismic interaction with safety-related systems during a design basis seismic event. (Section 4OA2.2)

### **Cornerstone: Initiating Events**

- Green: A self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B Criterion XVI Corrective Action was identified for failure to promptly identify and correct a missing cover on a safety-related undervoltage relay. The licensee's failure to identify the missing relay cover on the 27X4 relay during the extent of condition review performed for condition report 406045 was a performance deficiency. Procedure PSL-01.05, Apparent Cause Evaluation (ACE) Handbook Section 7.6, dated July 30, 2008, provided the guidance for the required extent of condition review. The licensee added signage on the electrical cabinet door warning of the relay hazard, additional actions to determine the extent of condition and replace the relay cover is planned.

The finding was determined to be more than minor because it affected the human performance attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, without the relay cover installed, the relay was more vulnerable to actuation as a result of unintentional contact and a loss of the 1B3 vital 4 kV electrical bus occurred which required an unnecessary start and loading of the 1B EDG. The finding screened as Green because none of the attributes in the Manual Chapter 0609 Appendix G Attachment 1 Shutdown Operations Significance Determination Process Phase 1 Operational Checklist 3 were adversely impacted. The primary contributor to this conclusion was the licensee's risk management controls which did not allow work in the train which was being relied upon for shutdown cooling. As a result, there was no loss of shutdown cooling for the event. There is no cross cutting aspect for the finding because the finding does not represent current licensee performance because the relay cover has been missing for several years. (Section 4OA2.4)

One violation of very low safety significance was identified by the licensee and reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into their corrective action program. This violation and corrective actions are listed in Section 4OA7 of this report.



## REPORT DETAILS

### Summary of Plant Status

#### Unit 1:

The Unit began the inspection period at full rated thermal power (RTP). On October 26, operators initiated a planned down power to approximately 4 percent RTP in order to replace main turbine electro-hydraulic fluid hoses. On October 29, the Unit was returned to full RTP.

#### Unit 2:

The Unit began the inspection period defueled. The unit went critical on November 20 and reached 95 percent power on December 8. On December 8, the Unit power was decreased to 41 percent to repair a heater drain cooler. The Unit reached full RTP on December 16.

### 1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

#### 1R01 Adverse Weather Protection

##### .1 Seasonal Winter Weather Conditions

###### a. Inspection Scope

The inspectors reviewed the licensee implementation of the station's cold weather preparations as described in procedure 0-NOP-99.06, Cold Weather Preparations. The inspectors verified conditions were met for entering the subject procedure and that equipment status was verified as directed by the procedure. The inspectors performed a walkdown of the following safety-related equipment on both units that are exposed to the outside weather conditions to identify any potential adverse conditions. Action requests (ARs) were checked to assure that the licensee was identifying and resolving weather related issues and that corrective actions from the previous cold weather season had been satisfactorily resolved.

- Unit 1A and 1B emergency diesel generator (EDG) rooms
- Unit 2A and 2B EDG rooms
- Unit 1 refueling water tank (RWT) area
- Unit 2 RWT area
- Unit 2 auxiliary feed water pump areas

###### b. Findings

No findings were identified.

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.2 Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

On October 25, the inspectors reviewed the status of licensee actions in accordance with Administrative Procedure (AP) 0005753, Severe Weather Preparations, when tropical storm Sandy was approaching the area. The inspectors verified conditions were met for entering the procedure and that equipment status was verified as directed by the procedure. The inspectors performed a walkdown of the following safety-related equipment that is exposed to outside weather conditions to identify any potential adverse conditions:

- Unit 1 and Unit 2 intake structures
- Unit 2 component cooling water (CCW) system
- Unit 2 EDG fuel oil storage tanks

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted partial alignment verifications of the three safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers by entering them into the corrective action program (CAP).

- Unit 1B EDG while the 1A EDG was out of service (OOS) for maintenance
- Unit 2B charging pump while the 2A and 2C charging pumps were OOS for maintenance
- Unit 2B control room air conditioning (CRAC) system while the 2A CRAC system was OOS for maintenance

b. Findings

No findings were identified.

## .2 Complete System Walkdown

### a. Inspection Scope

The inspectors conducted a detailed walkdown and review of the alignment and condition of the Unit 2A EDG system to verify its capability to meet its design basis function. The inspectors utilized licensee procedure 2-NOP-59.01A, 2A Emergency Diesel Generator Standby Initial Alignment, and drawing 2998-G-096, 2A Emergency Diesel Generator System Piping and Instrumentation Drawing, as well as other licensing and design documents to verify the system alignment was correct. During the walkdown, the inspectors verified, as appropriate, that: (1) valves were correctly positioned and did not exhibit leakage that would impact their function; (2) electrical power was available as required; (3) major portions of the system and components were correctly labeled, cooled, and ventilated; (4) hangers and supports were correctly installed and functional; (5) essential support systems were operational; (6) ancillary equipment or debris did not interfere with system performance; (7) tagging clearances were appropriate; and (8) valves were locked as required by the licensee's locked valve program. Pending design and equipment issues were reviewed to determine if the identified deficiencies significantly impacted the system's functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, system description, and outstanding maintenance work requests/work orders. In addition, the inspectors reviewed the licensee's CAP to ensure that the licensee was identifying and resolving equipment alignment problems.

### b. Findings

No findings were identified.

## 1R05 Fire Protection

### .1 Fire Area Walkdowns

#### a. Inspection Scope

The inspectors toured five plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure AP-1800022, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists, updated on an as-needed basis, were routinely reviewed. In addition, the inspectors reviewed the CAP database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- Unit 2 heating ventilation and air conditioning equipment room
- Unit 1 shut down cooling heat exchanger room
- Unit 1 control room

- Unit 1 auxiliary feed water pump areas (19.5 foot elevation)
- Unit 2 A and B EDG buildings

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors conducted walkdowns of the two areas listed below which included checks of building structure drainage sumps to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Section 3.4, Water Level (Flood) Design and UFSAR Table 3.2-1, Design Classification of Structures, Systems, and Components (SSC). The inspectors also reviewed plant procedures that discussed the protection of areas containing safety-related equipment that may be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, control of debris, and operability of sump pump systems.

- Unit 1 emergency core cooling system area
- Unit 1 shut down cooling heat exchanger room

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance

.1 Annual Review of Licensee Regualification Examination Results

a. Inspection Scope

On December 19, the licensee completed the annual requalification operating examinations required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Regualification Program." These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix I, "Operator Regualification Human Performance Significance Determination Process."

b. Findings

No findings were identified.

.2 Control Room Observations

a. Inspection Scope

Inspectors observed and assessed licensed operator performance in the plant and main control room, particularly during periods of heightened activity or risk and where the activities could affect plant safety. The inspectors focused on the following conduct of operations attributes as appropriate:

- Operator compliance and use of procedures
- Control board manipulations
- Communication between crew members
- Use and interpretation of plant instruments, indications and alarms
- Use of human error prevention techniques
- Documentation of activities, including initials and sign-offs in procedures
- Supervision of activities, including risk and reactivity management

The following four periods of heightened activity or risk were observed:

- Unit 1, October 26, power decrease to less than 5 percent RTP
- Unit 1, October 28, power increase to 100 percent reactor power
- Unit 2, October 28, reactor coolant system (RCS) fill-and vent and loop sweeps using the reactor coolant pumps
- Unit 2, December 15, 98 percent EPU reactor power plateau

This activity constituted four inspection samples.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the performance data and associated ARs for the two systems listed below to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and licensee Administrative Procedure ADM-17-08, Implementation of 10CFR50.65, Maintenance Rule. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of a(1) and a(2) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The

inspectors interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors also attended applicable expert panel meetings and reviewed associated system health reports. The inspectors verified that equipment problems were being identified and entered into the licensee's CAP.

- Unit 1 Low Pressure Safety Injection System
- Unit 2 Low Pressure Safety Injection System

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed plant walkdowns, in-office reviews, and control room inspections of the licensee's risk assessment of four emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants; and licensee procedure ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors interviewed responsible Senior Reactor Operators on-shift, verified actual system configurations, and specifically evaluated results from the online risk monitor (OLRM) for the combinations of out of service (OOS) risk significant systems, structures, and components (SSCs) listed below:

- Unit 1: 1B and 2B start-up transformer, 1A EDG, atmospheric dump valve 1-HCV-08-2A, and steam bypass control valve 1-PCV-8802 OOS
- Unit 1: Station blackout crosstie, steam bypass control valve PCV-8802, Main Steam Isolation Valves HCV-08-1A and 1B OOS
- Unit 1: 1B startup transformer, 1B CCW pump, and 1B EDG OOS
- Unit 2: B-train off-site power, 2B EDG, B-train shutdown cooling, and 2B spent fuel pool cooling pump OOS during B-train safeguards testing

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionalitya. Inspection Scope

The inspectors reviewed the interim dispositions and operability determinations associated with the following three action requests (ARs) to verify that operability was properly supported and that the affected SSCs remained available to perform their safety function with no increase in risk. The inspectors also reviewed the UFSAR, associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim dispositions.

- AR 1796780, Unit 2 control room air conditioning Mode 6 operability
- AR 1826824, 2B emergency diesel generator delta-T exhaust RTD failure
- AR 1822253, HVC-1B containment fan cooler

b. Findings

No findings were identified.

1R18 Plant Modificationsa. Inspection Scope

The inspectors reviewed the engineering change (EC) documentation for the permanent modification listed below. The inspectors reviewed the 10 CFR 50.59 screening and evaluation, fire protection review, environmental review, and license renewal review, to verify that the modifications had not affected system operability and availability. The inspectors reviewed associated plant drawings and UFSAR documents impacted by this modification and discussed the changes with licensee personnel to verify that the installation was consistent with the modification documents. The inspectors walked down accessible portions of the modification to determine if it was installed in the field as described in the associated documents. Additionally, the inspectors verified that that any issues associated with the modifications were identified and entered into the licensee's CAP.

- Unit 2 EC 24990, Containment Spray Pump Flow Limitation (71004)

b. Findings

No findings were identified.

## 1R19 Post Maintenance Testing

### a. Inspection Scope

For the four work orders (WOs) listed below, the inspectors reviewed the post maintenance test procedures and either witnessed the testing or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. The inspectors verified that the requirements of licensee procedure ADM-78.01, Post Maintenance Testing, were incorporated into test requirements.

- WO 40818647, 1A Emergency Diesel Generator Electronic Governor Failure
- WO 40153864, 1B Safety-Related 125-Volt DC Battery
- WO 40095070, 2B Containment Spray Flow Limitation EC-249990 (IP71004)
- WO 40157020, 2B Charging Pump SIAS Circuit Change EC-275025 (IP71004)

### b. Findings

No findings were identified.

## 1R20 Refueling and Other Outage Activities

### Unit 2 Refueling Outage SL2-20

#### a. Inspection Scope

##### Outage Planning, Control and Risk Assessment

During daily outage planning activities by the licensee, the inspectors reviewed the risk reduction methodology employed by the licensee during various refueling outage meetings including outage control center (OCC) morning meetings, operations daily team meetings, and schedule performance update meetings. The inspectors examined the licensee implementation of shutdown safety assessments during SL2-20 in accordance with Administrative Procedure 0-AP-0010526, Outage Risk Assessment and Control, to verify whether a defense in depth concept was in place to ensure safe operations and avoid unnecessary risk. Furthermore, the inspectors regularly monitored outage planning and control activities in the OCC and interviewed responsible OCC management during the outage to ensure system, structure, and component configurations and work scope were consistent with Technical Specification (TS) requirements, site procedures, and outage risk controls.

##### Monitoring of Shutdown Activities

The inspectors performed walkdowns of important systems and components used for decay heat removal from the reactor core and the spent fuel pool during the shutdown period including the intake cooling water system, component cooling water system, and spent fuel pool (SFP) cooling system.



### Outage Activities

The inspectors examined outage activities to verify that they were conducted in accordance with TS, licensee procedures, and the licensee's outage risk control plan. Some of the more significant inspection activities accomplished by the inspectors were as follows:

- Walked down selected safety-related equipment clearance orders
- Verified operability of RCS pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Verified shutdown cooling system and SFP cooling system operation
- Evaluated implementation of reactivity controls
- Reviewed control of containment penetrations
- Examined foreign material exclusion (FME) controls put in place inside containment (e.g., around the refueling cavity, near sensitive equipment and RCS breaches) and around the SFP
- Verified workers fatigue was properly managed.

### Refueling Activities and Containment Closure

The inspectors witnessed selected fuel handling operations being performed according to TS and applicable operating procedures from the main control room, refueling cavity inside containment, and the SFP. The inspectors also examined licensee activities to control and track the position of each fuel assembly. The inspectors evaluated the licensee's ability to close the containment equipment, personnel, and emergency hatches in a timely manner per procedure 2-MMP-68.02, Containment Closure.

### Heat-up, Mode Transition, and Reactor Startup Activities

The inspectors examined selected TS, license conditions, license commitments and verified administrative prerequisites were being met prior to mode changes. The inspectors also reviewed measured RCS leakage rates, and verified containment integrity was properly established. The inspectors performed a containment sump closeout inspection prior to reactor plant start up and conducted a containment walkdown while Unit 2 was at normal operating pressure and temperature. The results of low power physics testing were discussed with Reactor Engineering and Operations personnel to ensure that the core operating limit parameters were consistent with the design. The inspectors witnessed portions of the RCS heat up, reactor startup, and power ascension.

### Corrective Action Program

The inspectors reviewed ARs generated during SL2-20 to evaluate the licensee's threshold for initiating ARs. The inspectors reviewed ARs to verify priorities, mode holds, and significance levels were assigned as required. Resolution and implementation of corrective actions of several ARs were also reviewed for

completeness. The inspectors routinely reviewed the results of Quality Assurance daily surveillances of outage activities.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following five surveillance tests to verify that the tests met the TS, the UFSAR, the licensee's procedural requirements, and demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the positions/status required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP.

In-Service Test:

- 2-OSP-02.01A, 2A Charging Pump Code Run (IST)

Containment Isolation Valve Test:

- 2-OSP-68.02, Local Leak Rate Test, Penetration 28B – RCS Hot Leg Sample

Surveillance Test:

- 1-OSP-59.01A, 1A Emergency Diesel Generator Surveillance
- 1-OSP-09.01C, 1C Auxiliary Feedwater Pump Code Run (Operability Run Only)
- 2-OSP-69.13A, ESF- 18 Month Surveillance For SIAS/CIS/CSAS – Train A

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

#### 1EP4 Emergency Action Level and Emergency Plan Changes

##### a. Inspection Scope

The NSIR headquarters staff performed an in-office review of the latest revisions of various Emergency Plan Implementing Procedures (EPIPs) and the Emergency Plan located under ADAMS accession numbers ML12009A021, ML12089A060, ML12261A361, as listed in the Attachment.

The licensee determined that in accordance with 10 CFR 50.54(q), the changes made in the revisions resulted in no reduction in the effectiveness of the Plan, and that the revised Plan continued to meet the requirements of 10 CFR 50.47(b) and Appendix E to 10 CFR Part 50. The NRC review was not documented in a safety evaluation report and did not constitute approval of licensee-generated changes; therefore, these revisions are subject to future inspection. Documents reviewed are listed in the Attachment. This inspection activity satisfied one inspection sample for the emergency action level and emergency plan changes on an annual basis.

##### b. Findings

No findings were identified.

#### 1EP6 Drill Evaluation

##### .1 Emergency Preparedness Drills

##### a. Inspection Scope

On July 31, 2012, the inspector observed and assessed licensed operator crews actions during their annual requalification examination in a simulated steam generator tube rupture, a reactor trip, and trouble restoring the 2A3 vital 4kV electrical bus. The drill scenario included classification of the emergency events and making notifications to the state and the NRC. The inspectors assessed the licensee's actions to verify that emergency classifications and notifications were timely and made in accordance with licensee emergency plan implementing procedures and 10 CFR 50.72 requirements.

##### b. Findings

No findings were identified.

## 2. RADIATION SAFETY (RS)

Cornerstones: Occupational Radiation Safety and Public Radiation Safety

### 2RS6 Radioactive Gaseous and Liquid Effluent Treatment

#### a. Inspection Scope

Event and Effluent Program Reviews: The inspectors reviewed the 2010 and 2011 Annual Radiological Effluent Release Report (ARERR) documents for consistency with requirements in the Offsite Dose Calculation Manual (ODCM) and Technical Specification (TS) requirements. Routine and abnormal effluent release results and reports, as applicable, were reviewed and discussed with responsible licensee representatives. Status of the radioactive gaseous and liquid effluent processing and monitoring equipment including operability issues, and applicable equipment changes, as described in the Updated Final Safety Analysis Report (UFSAR) and current ODCM were discussed with responsible staff.

Equipment Walkdowns: The inspectors walked-down and discussed selected components of Unit 2 (U2) gaseous processing systems, and selected Unit (U1) and U2 liquid waste processing and discharge systems to ascertain material condition, configuration and alignment. To the extent practical, the inspectors observed and evaluated the material condition of in-place liquid waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. The walk-downs conducted with Chemistry personnel included discussion and evaluation of observed leaks, material condition, status of in-place plant work order tags, configuration controls associated with the U1 and U2 Spent Fuel Pool (SFP) tell-tale drains, outside waste monitor tanks, and associated piping including the process radiation monitor for this system.

Instrumentation and Equipment: The inspectors discussed and verified sample line and system flow rates for the U1 Plant Vent and U1 Fuel Handling Building exhaust systems. For the subject systems, sampling and processing of weekly effluent release permits were observed and discussed with responsible chemistry staff. In addition, the inspectors walked-down and evaluated the most recent surveillance test results for both trains of the U2 Emergency Core Cooling System (ECCS) Engineered Safety Feature (ESF) (2 HVE-9A&B) and U 2 Control Room (2-HVE-13B) ventilation and filtration equipment.

Effluents: The inspectors reviewed two gaseous release permits for continuous releases utilizing the U1 Mini-Purge and discussed these with the licensee staff. The inspectors reviewed 10 CFR 61 analysis data for expected nuclide distributions used to quantify effluents, the treatment of hard to detect nuclides, determination of appropriate calibration nuclides for effluent analysis instruments.

Ground Water Protection: The licensee's implementation of the Industry Ground Water Protection Initiative was reviewed for changes since the last inspection conducted in April 2010. This review included evaluation of onsite monitoring results for installed

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groundwater monitoring wells, vaults, manholes, and onsite ponds. The inspectors discussed and evaluated licensee actions associated potential releases to the groundwater environs including a December 17, 2011, event associated with the release of U1 ECCS water to an onsite Yard Sump and the subsequent contamination of several onsite catch basins. In addition, the inspectors directly observed and discussed surveillance activities associated with the U1 & U2 SFP leak detection systems.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) Action Request (AR)/Condition Report (CR) documents in the areas of gaseous and liquid effluent processing and release activities. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with Performance Improvement (PI) – St Lucie (SL) Procedure – 204, Condition Identification and Screening Process, Revision (Rev. 0) and PI-SL-205, Condition Evaluation and Corrective Action, Rev. 1.

Effluent process and monitoring activities were evaluated against details and requirements documented in the UFSAR Sections 11 and 12; Technical Specification (TS) Sections 6.8.1 Procedures and Programs, 6.8.4 (f), Radioactive Effluents Control Program, 6.8.4 (k), Ventilation Filter Test Program, and 6.9.1, Routine Reports; ODCM; 10 Code of Federal Regulations (CFR) Part 20; 10 CFR, Appendix I to Part 50; and approved licensee procedures. In addition, ODCM and UFSAR changes since the last onsite inspection were reviewed against the guidance in NUREG-1301 and Regulatory Guide (RG) 1.109, RG 1.21, and RG 4.1. Documents reviewed are listed in the Attachment.

The inspectors completed one sample as required by Inspection Procedure (IP) 71124.06.

b. Findings

No findings were identified.

2RS07 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Inspection Planning and Status: The inspectors reviewed and discussed changes to the ODCM and results presented in the Annual Environmental Radiological Environmental Operating Report (AREOR) documents issued for calendar year (CY) 2010 and CY 2011. Environmental monitoring sample results and trends presented in the CY 2010 and CY 2011 AREOR documents were reviewed and discussed. REMP contract laboratory cross-check program results, and current procedural guidance for offsite collection, processing and analysis of airborne particulate and iodine, broadleaf vegetation, and surface water samples were reviewed and discussed. The AREOR environmental measurement results were reviewed for consistency with licensee effluent data and evaluated for radionuclide concentration trends. Licensee actions for missed environmental monitoring samples were reviewed and discussed. The inspectors independently verified detection level sensitivity requirements for airborne iodine-131

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(I-131) screening activities and quantitative analyses by the contract environmental laboratory. In addition, the inspectors reviewed and evaluated recent corporate audit and contractor self-assessments conduct for REMP activities audits

Site Inspection: The inspectors observed implementation of selected REMP monitoring and sample collection activities for atmospheric, broadleaf vegetation and surface water samples as specified in the current ODCM and applicable procedures. The inspectors observed equipment material condition and verified operability, including verification of flow rates and total sample volume results for the weekly airborne particulate filter and iodine cartridge change-outs at select atmospheric sampling stations. In addition, the inspectors observed and discussed broadleaf vegetation and surface water sampling for selected stations. Thermo luminescent dosimeter material condition and placement were verified by direct verification at select ODCM specified locations. Land use census results, actions for missed samples including compensatory measures, and availability of replacement equipment were discussed with environmental technicians and knowledgeable licensee staff. In addition, calibration and maintenance surveillance records for the installed environmental air sampling stations were reviewed.

Procedural guidance, program implementation, quantitative analysis sensitivities, and environmental monitoring results were reviewed against 10 CFR Part 20; Appendix I to 10 CFR Part 50; TS Sections 6.8.1, Procedures and Programs, 6.8.4 (g) Radiological Environmental Monitoring Program, 6.9.1, Routine Reports, 6.9.1.8, the Annual Radiological Environmental Operating Report; ODCM, Rev. 37; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; and the Branch Technical Position, An Acceptable Radiological Environmental Monitoring Program - 1979. Documents reviewed are listed in the Attachment.

Meteorological Monitoring Program: The inspectors conducted a tour of the meteorological tower and observed local data collection equipment readouts. The inspectors observed the physical condition of the tower and associated instruments and discussed equipment operability, maintenance history, and backup power supplies with responsible licensee staff. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed applicable tower instrumentation calibration records and evaluated meteorological measurement data recovery results from June 1, 2010, through September 1, 2012.

Licensee procedures and activities related to meteorological monitoring were evaluated against: UFSAR Section 2.3; RG 1.23, Meteorological Monitoring Programs For Nuclear Power Plants; and ANSI/ANS-2.5-1984, Standard for Determining Meteorological Information at Nuclear Power Sites. Documents reviewed are listed in the Attachment.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) Action Request/Condition (AR/CR) documents in the areas of environmental and meteorological monitoring. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with PI-SL-204, Condition Identification and Screening Process, Rev. 0) and PI-SL-205, Condition Evaluation and Corrective Action, Rev. 1.

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The inspectors completed all of the specified line-items to complete one sample as required by IP 71124.07. Review of the licensee's groundwater protection program activities and decommissioning file data are documented in Section 2RS6 of the report

b. Findings

No findings were identified.

**4. OTHER ACTIVITIES (OA)**

4OA1 Performance Indicator (PI) Verification

.1 Mitigating Systems Cornerstone

a. Inspection Scope

Mitigating Systems Cornerstone: The inspectors checked licensee submittals for the Unit 1 and Unit 2 mitigating system performance indicators (MSPIs) listed below for the period October 1, 2011 through September 30, 2012, to verify the accuracy of the PI data reported during that period. Performance indicator definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, and licensee procedures ADM-25.02, NRC Performance Indicators, and NAP-206, NRC Performance Indicators, were used to check the reporting for each data element. The inspectors checked operator logs, plant status reports, condition reports, system health reports, and PI data sheets to verify that the licensee had identified the required data, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- Emergency AC power
- Residual heat removal system
- Heat removal system
- High pressure injection system
- Cooling water system

b. Findings

No findings were identified.

.2 Radiation Safety Cornerstones

a. Inspection Scope

Occupational Radiation Safety Cornerstone The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from January 1, 2011, through September 30, 2012. For the assessment period, the inspectors reviewed electronic dosimeter (ED) alarm logs and selected Action Request (AR)/Condition Request (CR) documents related to controls for exposure

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significant areas and events. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the Attachment.

Public Radiation Safety Cornerstone The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from January 1, 2011, through September 30, 2012. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and CRs related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the Attachment.

The inspectors completed two of the required samples specified in IP 71151.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Reviews

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered daily into the licensee's CAP. This review was accomplished by reviewing daily printed summaries of action requests and by reviewing the licensee's electronic AR database. Additionally, reactor coolant system unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

b. Findings

No findings were identified.

.2 Semi-Annual Trend Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of July 2012 through December 2012,

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although some examples expanded beyond those dates when the scope of the issue warranted. The inspectors evaluated the licensee's administration of these selected condition reports in accordance with the corrective action program as specified in licensee procedures PI-SL-204, Condition Identification and Screening Process, and PI-SL-205, Condition Evaluation and Corrective Action. The inspectors reviewed the licensee's trend AR 1829233 which documented an apparent cause evaluation for recent issues identified by the inspectors associated with seismic restraint of ladders.

b. Findings and Observations

Introduction: A Green, NRC identified, non-cited violation (NCV) of Technical Specification (TS) 6.8.1, was identified which requires that written procedures be established, implemented, and maintained covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. The inspectors identified four examples where licensee's procedures for seismic restraint of ladders were not complied with as written. During the licensee's extent of condition review, 24 additional examples were identified.

Description: Requirements for seismically restraining ladders are specified in the following licensee procedures: MA-AA-100-1008, Station Housekeeping and Material Control; QI-13-PSL, Housekeeping and Cleanliness Controls Methods St. Lucie Plant; ADM-04.02, Industrial Safety Programs; and ADM-27.11, Scaffold Control. The procedures require an engineering evaluation if the seismic restraints requirements cannot be met. The inspectors identified four examples of ladders not seismically restrained in accordance with the licensee's procedures.

Example 1: On October 5, in the Unit 1 emergency core cooling system room, the inspectors identified a ladder leaning directly over the 1A high head safety injection pump that was not secured at the top where it was resting on an 8-inch diameter pipe. There was no engineering evaluation for this ladder. The licensee placed this issue into the CAP as AR 1810262.

Example 2: On November 19, in the Unit 2B EDG building, the inspectors identified a ladder that was partially restrained leaning against the EDG radiator. The ladder was not seismically restrained per the requirements on engineering evaluation PSL-ENG-SECS-06-042, Evaluation of Temporary Ladder Installed for Access to EDG Radiator Expansion Tanks, that was written for this ladder application. The licensee placed this issue into the CAP as AR 1825094.

Example 3: On November 30, in the Unit 1 shutdown cooling (SDC) heat exchanger room, the inspectors identified two ladders had been placed directly over the 1A SDC heat exchanger. There were no engineering evaluations for these ladders. The licensee placed this issue into the CAP as AR 1828570.

Example 4: On December 4, in the Unit 2 component cooling water (CCW) system building, the inspectors identified an unrestrained ladder leaning against the 2A CCW heat exchanger. Additionally, there was a ladder leaning against the 2B CCW heat

exchanger that was partially restrained. There were no engineering evaluations for these ladders. The licensee placed this issue into the CAP as AR 1829619.

No equipment operability issues were identified for any of these four examples. However, the inspectors identified an adverse trend on seismic restraints of ladders. The licensee initiated a severity level 2 apparent cause evaluation AR 1829233. Immediate licensee actions included assembling a team which consisted of personnel from Maintenance, Operations and Engineering to perform a site-wide walkdown to identify and correct any ladders not in compliance with procedure seismic restraint requirements. The licensee identified 24 additional examples of ladders not in compliance with procedure requirements. In all cases the ladders were immediately brought into compliance with procedures. At the completion of this inspection period the licensee's investigation on this issue had not been completed and corrective actions were still being developed. However, the licensee had concluded there existed a programmatic issue with the seismic restraints of ladders as a result having the restraint requirements spread throughout several procedures which made it difficult to recognize which procedure was applicable for the ladder application at hand.

Analysis: The licensee's repeated failure to comply with procedures to seismically restrain ladders was a performance deficiency. The performance deficiency was determined to have more than minor significance because if left uncorrected, the failure to comply with station procedures to ensure adequate restraining of seismically controlled ladders, could lead to a more significant safety concern. Specifically, seismically unrestrained ladders could impact safety-related equipment during a design basis seismic event. Using Manual Chapter 0609.04 Significance Determination Process Initial Characterization of Findings Table 2 dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. The finding occurred while the Units were at power. Manual Chapter 0609 Appendix A, Significance Determination Process (SDP) for Findings At-Power, Exhibit 2 - Mitigating Systems Screening Questions dated, June 19, 2012, was used to further evaluate this finding. The finding screened as green because none of the logic questions under the cornerstone applied. The finding involved the cross-cutting area of human performance, in the component of resources and the aspect of adequate procedures (H.2.c) in that, the licensee failed to ensure complete, accurate, and up-to-date procedures were available for licensee personnel to ensure ladders were restrained to prevent seismic interaction with safety-related systems during a design basis seismic event.

Enforcement: Unit 1 and Unit 2 Technical Specification 6.8.1, Procedures and Programs, requires, in part, that written procedures be implemented covering activities referenced in Regulatory Guide 1.33, Revision 2, dated February 1978, that include safety-related activities carried out during operation of the reactor plants. Section 9.a, Procedures for Performing Maintenance, states in part, Maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures appropriate to the circumstances. Requirements to seismically restrain ladders to ensure no interaction with safety-related equipment during a design basis seismic event are specified in: MA-AA-100-1008, Station Housekeeping and Material Control; QI-13-PSL, Housekeeping and Cleanliness Controls Methods St. Lucie Plant; ADM-04.02, Industrial Safety Programs; and ADM-

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27.11, Scaffold Control. Contrary to the above, 28 examples were identified where the licensee failed to seismically restrain ladders located near safety-related equipment as specified in the licensee's procedures. Corrective actions planned include consolidating ladder seismic restraint requirements into one procedure to ensure there is no confusion as to which procedure is applicable for the ladder application at hand. Because the licensee entered the issue into their corrective action program as AR 1829233 and the finding is of very low safety significance (Green), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000335, 389/2012005-01, Failure to Follow Seismic Restraining Procedures on Ladders Located Near Safety-Related Equipment.

.3 Unit 2 Extended Power Uprate (EPU) Identification and Resolution of Problems (IP 71004)

a. Inspection Scope

The inspector reviewed selected corrective action program (CAP) ARs generated by the licensee during an extended power up rate power ascension on Unit 2 following issuance of a licensee amendment to operate at a higher reactor power level. In addition, the inspectors verified that problems were being properly identified, appropriately characterized, and entered into the CAP. The inspectors reviewed corrective action program documents that were issued during the power ascension associated with secondary plant equipment. The inspectors conducted plant walkdowns of plant equipment associated with the EPU to assess material condition and operation in order determine if any deficiencies existed that had not been previously entered into the CAP. Control room walkdowns were performed to assess new EPU control equipment and instruments were functioning properly and deficiencies were documented in the control room deficiency logs.

b. Findings and Observations

No findings were identified. The inspectors determined that the licensee was effective in identifying problems and entering them into the CAP and there was a low threshold for entering issues into the CAP associated with the EPU power ascension. This conclusion was based on a review of the requirements for initiating ARs as described in licensee procedure PI-SL-204, "Condition Identification and Screening Process," and PI-SL-205, "Condition Evaluation and Corrective Action" and that no new deficiencies were identified by inspectors during plant walkdowns not already entered into the CAP.

.4 Annual Sample Review - Inadvertent Contact with Relay Results in Bus Stripping and 1B Emergency Diesel Generator Actuation

a. Inspection Scope

The inspectors selected AR 01733108 for a more in depth review of the circumstances and the corrective actions that followed. During work in an electrical cabinet inadvertent contact was made with a relay. This resulted in the stripping of the 1B train vital electrical safety bus and actuation of the 1B EDG. The licensee performed a root cause

of the event. The inspectors reviewed the licensee's evaluation of the event and the associated corrective actions taken or planned. The inspectors interviewed plant personnel, reviewed the root cause conclusions, contributing cause conclusions and the planning and completion of corrective actions.

b. Findings and Observations

Introduction: A Green self-revealing, non-cited violation (NCV) of 10 CFR 50 Appendix B, Criterion XVI, Corrective Action was identified for failure to promptly identify and correct a missing cover on a safety-related undervoltage relay.

Description: On February 10, 2012, while working in an electrical cabinet, the 27X4 Undervoltage (Degraded) Auxiliary Relay, GE model HGA11J, for the 1B2 480 volt Emergency Bus was inadvertently bumped. Relay 27X4 provides the output signal which initiates the load shedding sequence for the 1B3 vital 4.16 kV electrical safety bus. As a result of the inadvertent contact, the 1B3 4.16 kV bus was automatically de-energized, loads stripped, the 1B EDG started and re-energized the 1B3 4.16 kV bus. Unit 1 was in mode 5 with the 1A train providing shutdown cooling. No interruption of decay heat removal occurred as a result of the event and all equipment responded as expected. The licensee initiated AR 1733108 and performed a root cause of the event. The root cause identified multiple condition reports dating back to 2002 which identified relays with missing covers. Each instance was addressed by installing the cover with the exception of one instance where the relay was replaced but the cover was not installed. Condition report 2004-1770 documented that one purpose of the relay cover was to prevent personnel contact with the live electrical contacts. In 2008, condition report 406045 was written for another instance of inadvertent contact with a relay with a missing cover and an apparent cause evaluation was performed. Procedure PSL-01.05, "Apparent Cause Evaluation (ACE) Handbook," Section 7.6, dated July 30, 2008 defined extent of condition as the extent to which the actual condition exists with other plant processes, equipment or human performance. PSL-01.05 also required that an extent of condition be performed for all apparent cause evaluations. The extent of condition focused very narrowly on the installation of EMPATH electrical monitoring equipment in energized equipment and did not identify missing covers on additional relays as non-conforming conditions adverse to quality. The apparent cause documented a lack of understanding of the potential impact of the missing covers. The repeat occurrence condition review utilized the keyword search for EMPATH and did not result in any other instances. The failure to identify several previous instances of missing relay covers during the required extent of condition review allowed additional missing relay covers to go unrecognized. AR 1733108 determined the root cause as the licensee did not understand or question the risk significance/impact of the relays being left unprotected. The licensee took immediate corrective action to post signage on the electrical cabinet with the unprotected relay. Additional planned corrective actions include an inspection to identify additional relays with missing covers and procedure changes to verify the relay covers are installed following maintenance.

Analysis: The licensee's failure to identify the missing relay cover on the 27X4 relay during the extent of condition review performed for condition report 406045 was a performance deficiency. Licensee procedure PSL-01.05, "Apparent Cause Evaluation (ACE) Handbook," Section 7.6, dated July 30, 2008, provided guidance for the required extent of condition review. The performance deficiency was determined to be more than minor because it affected the human performance attribute of the Initiating Events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Specifically, without the relay cover installed, the relay was more vulnerable to actuation as a result of unintentional contact and a loss of the 1B3 vital 4.16 kV electrical bus occurred which required an unnecessary start and loading of the 1B EDG. Using Manual Chapter 0609.04, Initial Characterization of Findings, Table 2, dated June 19, 2012, the finding was determined to be a transient initiator contributor and affected the Initiating Events cornerstone. The finding occurred while the unit was shutdown. Manual Chapter 0609 Appendix G, Attachment 1 Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWR's and BWR's dated May 25, 2004 was used to further evaluate the finding. Checklist 3 was used because the steam generators were not available for decay heat removal and the time to boil was less than two hours. The inspectors reviewed the finding with the regional senior reactor analyst. The finding screened as Green because none of the attributes in the checklist were adversely impacted. The primary contributor to this conclusion was the licensee's risk management controls which did not allow work in the train which was being relied upon for shutdown cooling. As a result, there was no loss of shutdown cooling for the event. No cross-cutting aspect was assigned because the last condition report generated for a missing relay cover occurred in 2008. Therefore, this finding was not representative of current licensee performance.

Enforcement: 10 CFR 50 Appendix B, Criterion XVI, Corrective Action, requires in part that measures shall be established to assure that conditions adverse to quality, such as deficiencies, deviations and non-conformances are promptly identified and corrected. Licensee procedure PSL-01.05, Apparent Cause Evaluation (ACE) Handbook, Section 7.6, dated July 30, 2008, required the licensee to perform an extent of condition review for a previous inadvertent relay actuation event documented in condition report 406045.

Contrary to above, on June 19, 2009, condition report 406045 was completed with an inadequate extent of condition. Specifically, the extent of condition focused very narrowly on the installation of electrical monitoring equipment in energized equipment and did not seek to identify missing covers on additional relays as non-conforming conditions adverse to quality. On February 10, 2012, as a result of inadvertent contact to the unprotected 27X4 relay, safety-related systems were unnecessarily actuated. A review of the maintenance history for the 27X4 relay could not determine when the cover was removed or if the cover had ever been installed. The relay cover was not required for operability. Corrective actions included adding signage on the electrical cabinet door warning of the relay hazard and procedure changes to ensure relay covers are in place following maintenance. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy because it was of very low safety significance and was entered into the licensee's corrective action program as AR 1733108. This

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violation is designated as NCV 05000335/2012005-02, Missing Relay Cover Results in Inadvertent Emergency Diesel Generator Actuation.

4OA3 Event Follow-up

.1 (Closed) Licensee Event Report (LER) 05000335/2012007-00, 1A2 EDG Coolant Leakage Rendered EDG Inoperable

On April 2, 2012, the 1A2 EDG tripped on high jacket water temperature during scheduled monthly surveillance testing. The cause of the engine trip was a failed thermal well in the EDG immersion heater. The failed thermal well allowed water intrusion into the high jacket water temperature switch control circuit and resulted an inadvertent actuation of the high jacket water temperature engine trip. The inspectors reviewed the LER and AR 1751214 that documented the event. A Green non-cited violation (NCV) 05000335/2012007-04, Failure to Implement Vendor Technical Manual Recommendations to Inspect EDG immersion Heaters was previously issued and documented in the St. Lucie second quarter 2012 Integrated Inspection Report 05000335/2012003, 05000389/2012003, dated July 30, 2012. No additional findings were identified. This LER is closed.

.2 (Closed) LER 05000335/2012001-00, Unit 1 Inadvertent Start of EDG upon Unexpected Undervoltage Condition

On February 10, 2012, St. Lucie Unit 1 was in Mode 5. While working in an electrical cabinet a worker inadvertently bumped a relay. The inadvertent contact resulted in the relay to actuate and caused bus stripping of the 1B safety bus and an automatic start of the 1B emergency diesel generator. The inspectors reviewed the LER and AR 1733108 that documented the event. Enforcement actions associated with this LER are documented in Section 4OA2.4. This LER is closed.

.3 (Closed) LER 05000335/2012006-00, Installation Wiring Error in the 1A Auxiliary Feedwater Flow Transmitter

On June 5, 2012, while Unit 1 was in Mode 1 at 100 percent reactor power, the licensee discovered auxiliary feedwater (AFW) flow instrument FT-09-2A to be inoperable. The instrument was discovered to be inoperable during the performance of a monthly AFW flow surveillance test when the transmitter would not indicate AFW flow. Upon discovery of the condition, the licensee performed troubleshooting on FT-09-2A and determined that the square root extractor had been wired incorrectly during its initial installation on May 10, 2012. The licensee corrected the square root extractor wiring issue and returned the instrument to operable status on June 5, 2012. The licensee submitted LER 05000335/2012-006-00 to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B) as a condition that was prohibited by technical specifications because FT-09-2A is required by technical specification 3.3.3.8 to be operable. The inspectors reviewed the LER and the licensee's root cause evaluation for the event. The inspectors reviewed and evaluated work order instructions used for the replacement of the square root extractor on May 10, 2012, and the post maintenance test that was performed prior to returning FT-09-2A to service. Additionally, the inspectors evaluated the licensee's completed

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and proposed corrective actions to determine if the actions were appropriate and addressed the cause of the event. The enforcement aspects associated with this LER are discussed in Section 4OA7. This LER is closed.

.4 (Closed) LER 05000335/2012005-01, Unit 1 Reactor Trip on Turbine Trip

The revision to this LER provided the results of the root cause evaluation and associated corrective actions completed or planned. A Green Finding (FIN) 05000335/2012009-01, Failure to Adequately Implement Design Change Procedure, was previously issued and documented for this event in the St. Lucie Supplemental Inspection Report 05000335/2012009, dated November 16, 2012. No additional findings were identified. Licensee letter (L-2012-402) associated with this LER revision documented that the original LER submitted had the incorrect sequence number of 2012-007. The correct sequence number is 2012-005. This LER is closed.

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel activities to ensure that the activities were consistent with the licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.2 Power Uprate, Inspection Procedure 71004

Unit 2 Extended Power Uprate (EPU)

a. Inspection Scope

The inspectors observed or reviewed test data for selected plant testing such as charging pump flow tests and containment spray pump flow testing and power ascension activities during and following the Unit 2 EPU outage including power ascension from 30 percent reactor power to 100 percent reactor power. Documents reviewed are listed in the Attachment.

From December 3 - 6, 2012, the inspectors observed reactor power ascension in accordance with NRC inspection procedure 71004, "Power Uprate." The inspectors performed walkdowns of the primary and secondary plant, attended pre-job meetings, observed control room operations, and reviewed power ascension plateau test data at 30, 50, 70, 89, 92, 95, 98, and 100 percent reactor power levels to ensure reactor power nuclear instrumentation and secondary plant calorimetric data was as expected. The inspectors reviewed the neutron and gamma survey results performed at 92 and 100 percent reactor power levels to ensure radiation levels were as expected.

The inspectors reviewed the licensee's corrective action program associated with the EPU and power ascension test programs for Unit 2 to determine if the licensee was initiating action requests, evaluating deficient conditions, and taking adequate corrective actions during power ascension. A number of inspection samples were previously documented in NRC integrated inspection report 05000335/2012004, 05000389/2012004.

The inspectors evaluated an engineering design change package EC 24990, Containment Spray Flow Limitation to ensure the modification had no adverse effects on system availability, reliability, and functional capability as documented in section 1R18 of this report.

The inspectors selected two post maintenance tests associated with the containment spray system and the chemical volume control system charging pumps. The tests were witnessed or test records reviewed to determine if the scope of testing verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. The inspectors verified that the requirements of licensee procedure ADM-78.01, Post Maintenance Testing, were incorporated into test requirements.

b. Findings

No findings were identified

.3 (Closed) Temporary Instruction (TI) 2515/188 – Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns

a. Inspection Scope

On September 27, 2012, the inspectors performed independent walkdowns of the 2B Diesel Generator, the 2B Diesel Generator Control Panel, the 2B Diesel Generator Start Up Air Tank 2B11 (DG 2B SU/AR 2B1), the Unit 2 Containment Fan Cooler for RCB A/C System during Normal Operation (HVS-1B), the Unit 2 Containment Fan Cooler for RCB A/C System during Normal Operation (HVS-1D), Safety Injection Tank 2A1, and Safety Injection Tank 2B1 and verified that the referenced components were free of potential adverse seismic conditions such as:



- Anchorage was free of bent, broken, missing or loose hardware
- Anchorage was free of corrosion that is more than mild surface oxidation
- Anchorage was free of visible cracks in the concrete near the anchors
- Anchorage configuration was consistent with plant documentation.
- SSCs will not be damaged from impact by nearby equipment or structures.
- Overhead equipment, distribution systems, ceiling tiles and lighting, and masonry block walls are secure and not likely to collapse onto the equipment.
- Attached lines have adequate flexibility to avoid damage.
- The area appears to be free of potentially adverse seismic interactions that could cause flooding or spray in the area.
- The area appears to be free of potentially adverse seismic interactions that could cause a fire in the area.
- The area appears to be free of potentially adverse seismic interactions associated with housekeeping practices, storage of portable equipment, and temporary installations (e.g., scaffolding, lead shielding).

In addition, the inspectors verified that items that could allow the spent fuel pool to drain down rapidly were added to the Seismic Walkdown Equipment List (SWEL) and that these items were scheduled to be walked down by the licensee prior to completion of the Unit 2 outage.

b. Observations

The inspectors noted that observations made during the licensee walkdowns that could not be determined to be acceptable were entered into the licensee's corrective action program for evaluation.

c. Findings

No findings were identified.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jensen and other members of licensee management on January 15, 2013. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy, for being dispositioned as an NCV.

St. Lucie Unit 1 Technical Specification 3.3.3.8, Accident Monitoring Instrumentation (with Table 3.3-11), requires, in part, that auxiliary feedwater flow instrumentation be operable in modes 1, 2, and 3. Action 7 of Table 3.3-11 requires inoperable auxiliary feedwater flow instrumentation to be returned to an operable condition within 72 hours or otherwise shutdown the unit to hot standby within six hours and to hot shutdown in 12 hours. Additionally, St. Lucie Unit 1 Technical Specification 6.8.1(a) states, in part, that the licensee shall establish, implement, and maintain the applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Rev. 2, 1978. Section 9(a) of Appendix A to Regulatory Guide 1.33, Rev. 2, states, in part, that maintenance that can affect the quality of safety-related equipment should be properly preplanned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Contrary to the above requirements, on May 10, 2012, the licensee did not implement adequate maintenance instructions that were appropriate to the circumstances in work order 40160852-01 to ensure that the safety-related square root extractor for auxiliary feedwater instrument FT-09-2A was wired correctly when it was installed in the plant and returned to service. As a result, FT-09-2A was inoperable from May 10, 2012, until discovery and correction of the wiring error on June 5, 2012 (27 days). The licensee entered this issue into their corrective action program as action requests 1773238 and 1828394. The failure to implement adequate work instructions in work order 40160852-01 to ensure that the square root extractor for FT-09-2A was wired correctly was a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment performance attribute of the mitigating systems cornerstone and adversely impacted the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events. The inspectors evaluated significance of the issue using NRC Inspection Manual Chapter 0609.04, Initial Characterization of Findings; and Inspection Manual Chapter 0609, Appendix A, The Significance Determination Process for Findings at Power, Exhibit 2. The inspectors determined the finding was of very low safety significance (Green) because the inoperable flow indication did not result in a loss of auxiliary feedwater heat removal safety function. Because this violation was of very low safety significance and was entered in the licensee's corrective action program as action requests 1773238 and 1828394, this violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the NRC Enforcement Policy.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

## KEY POINTS OF CONTACT

### Licensee personnel:

C. Bach, Chemistry Manager  
S. Baker, Seismic Walkdown Engineer (Stevenson Associates)  
M. Baughman, Training Manager  
E. Belizar, Projects Manager  
C. Bible, Engineering Director  
M. Bladek, Operations  
D. Calabrese, Emergency Preparedness Coordinator  
D. Cecchetti, Licensing Engineer  
D. Deboer, Operations Director. Frehafer, Licensing Engineer  
R. Filipek, Design Engineering Manager  
J. Hamm, Maintenance Director  
E. Hollowell, Civil Principal Engineer  
T. Horton, Assistant Operations Manager  
B. Hughes, Plant General Manager  
J. Jensen, Site Vice President  
E. Katzman, Licensing Manager. McDaniel, Fire Protection Supervisor  
C. Martin, Health Physics Manager  
J. Owens, Performance Improvement Manager  
S. Ramani, Civil/Mechanical Engineering Supervisor  
P. Rasmus, Assistant Operations Manager  
M. Snyder, Site Quality Assurance Manager  
D. Tanis, Site Safety Manager  
G. Tullidge, FPL/PRA  
D. West, System and Component Staff Engineer  
T. Young, Security Manager  
H. Young, Seismic Walkdown Engineer (Stevenson Associates)

### NRC personnel:

D. Rich, Chief, Branch 3, Division of Reactor Projects  
S. Vias, Chief, Engineering Branch 3, Division of Reactor Safety

## LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

### Opened and Closed

05000335, 389/2012005-01	NCV	Failure to Follow Seismic Restraining Procedures on Ladders Located Near Safety-Related Equipment (4OA2.2)
05000335/2012005-02	NCV	Missing Relay Cover Results in Inadvertent Emergency Diesel Generator Actuation (Section 4OA2.4)

Closed

05000335/2012007-00	LER	1A2 EDG Coolant Leakage Rendered EDG Inoperable (Section 4OA3.1)
05000335/2012001-00	LER	Unit 1 Inadvertent Start of EDG upon Unexpected Undervoltage Condition (Section 4OA3.2)
05000335/2012006-00	LER	Installation Wiring Error in the 1A Auxiliary Feedwater Flow Transmitter (Section 4OA3.3)
05000335/2012005-01	LER	Unit 1 Reactor Trip on Turbine Trip (Section 4OA3.4)
05000335, 389/2515/188	TI	Temporary Instruction 2515/188 - Inspection of Near-Term Task Force Recommendation 2.3 Seismic Walkdowns (4OA5.3)

**LIST OF DOCUMENTS REVIEWED**Action Requests

01808782	01813751	01814553	01804391	01827163
01807646	01813792	01813642	01814927	01826938
01827371	01827373	01827533	01806367	01805978
01896732	01828210	01829380	01829475	01829233
01829264	01828570	01828837	01830071	01829941
01833204	01833072	01833065	01829060	01829062
01834024	01833399	01833811	01833572	01833320
01834370				

**Section 1R01: Adverse Weather Protection**

OP-AA-102-1002, Seasonal Readiness  
0005753, Severe Weather Preparations  
ADM 4.01, Hurricane Season Preparations  
0-NOP-99.06, Cold Weather Preparations

**Section 1R04: Equipment Alignment**

Piping and Instrument Drawing, 8770-G-096, 1B Emergency Diesel Generator System  
Piping and Instrument Drawing, 2998-G-096, 2B Emergency Diesel Generator System

**Section 1R05: Fire Protection**

ADM-0005728, Fire Protection Training, Qualification and Requalification  
 ADM-1800022, Fire Protection Plan  
 AP-1-1800023, Unit 1 Fire Fighting Strategies  
 AP-2-1800023, Unit 2 Fire Fighting Strategies

**Section 1R11: Licensed Operator Requalification Program and Licensed Operator Performance**

St. Lucie Plant Simulator Evaluation Guide 0815001, Revision 25  
 2-NOP-01.05, Filling and Venting The RCS

**Section 1R12: Maintenance Effectiveness**

NAP-415, Maintenance Rule Program Administration  
 ADM-17.08, Implementation of 10 CFR 50.65, Maintenance Rule  
 SCEG-004, Guideline for Maintenance Rule Scoping, Risk Significant Determination, and Expert Panel Activities  
 U1 System Health Report for the Low Pressure Safety Injection Pump, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarter of 2012  
 U2 System Health Report for the Low Pressure Safety Injection Pump, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> Quarter of 2012

**Section 1R13: Maintenance Risk Assessments and Emergent Work Control**

OP-AA-104-1007, Online Aggregate Risk  
 WCG-016, Online Work Management  
 ADM-17.16, Implementation of The Configuration Risk Management Program

**Section 1R15: Operability Determinations and Functionality**

EN-AA-203-1001, Operability Determinations / Functionality Assessments

**Section 1R18: Plant Modifications**

ADM-17.18, Temporary System Alterations  
 ADM-17.11, 10 CFR 50.59 Screening  
 QI-3-PSL-1, Design Control

**Section 1R19: Post Maintenance Testing**

ADM-78.01, Post Maintenance Testing

**Section 1R20: Refueling and Other Outage Activities**

ADM-0010728, Unit Restart Readiness

**Section 1R22: Surveillance Testing**

ADM-29.02, ASME Code Testing of Pumps and Valves

**Section 1EP4: Emergency Action Level and Emergency Plan Changes****Change Packages**

St. Lucie Plant Radiological Emergency Plan, Revision 56  
 EPIP-01, "Classification of Emergencies," Revision 19  
 Radiological Emergency Plan, Revision 58

EPIP-02, "Duties and Responsibilities of the Emergency Coordinator," Revisions 31 and 32  
 EPIP-06, "Activation and Operation of the Emergency Operations Facility," Revisions 27 and 28

**Section 2RS06: Radioactive Gaseous and Liquid Effluent Treatment**

Procedures and Guidance Documents

Chemistry Procedure (C) – 200, Offsite Dose Calculation Manual, Revision (Rev.) 37  
 0-COP-65.02, Effluent Grab Sampling, Rev. 17  
 0-COP-01.06, Processing Gaseous Waste, Rev. 10.B  
 CY-SL-104-1011, Unit 1 Gaseous Effluent Grab Sampling, Rev 0  
 Normal Operating Procedure (NOP)-1-0510020, Oxygenated Waste System, Rev. 25  
 1-NOP-06.01, Controlled Liquid Release to the Circulating Water Discharge, Rev. 17  
 PI-SL-204, Condition Identification and Screening Process, Rev 8  
 PI-SL-205, Condition Evaluation and Corrective Action, Rev 8

Records and Data Reviewed

Chemistry Count Room Cross Check Results for Gross Alpha, Tritium, Gross Beta Counters  
 and all HPGE Detector Tech Spec geometries for 2010 and 2011.  
 2012 10CFR61 Analysis Results, 07/31/2012  
 Unit 1 Liquid Release Permit (LRP) #L-11-058-B, "B" Waste Monitor Tank, 09/11/2011  
 Unit 1 LRP #L-11-059-B, "B" Waste Monitor Tank, 09/11/2011  
 Unit 1 LRP #L-12-067-B, "A" Waste Monitor Tank 09/12/2012  
 Unit 1 LRP #L-12-078-B, "A" Waste Monitor Tank 10/17/2012  
 Unit 1 Gaseous Waste Permit #G-12-285-B, Unit 1 Mini-Purge, 09/01/2012  
 Unit 1 Gaseous Waste Permit #G-12-331-B, Unit 1 Mini-Purge, 10/15/2012  
 Unit 1 SFP Telltale Drain leakage data from July 2007 – September 2012  
 Work Order (WO) 39017533 04, Unit 2 Line AE-40 Permanent Leak Repair, dated -2/10/2011  
 Combined Annual Radioactive Effluent Release Report for the Period January 1, 2010, through  
 December 31, 2010  
 Combined Annual Radioactive Effluent Release Report for the Period January 1, 2011, through  
 December 31, 2011  
 WO 309320, GEL Laboratories, LLC Analytics, "Hard to Detect" Analysis of 1st and 2nd  
 Quarter ODCM liquid release point composites, dated 09/04/2012  
 Gas Permit G-12-334-C, Pre-Release Data, Unit 1 Plant Vent started 10/08/2012 and  
 completed 10/16/2012 including associated count room analyses for gas, iodine and  
 particulate  
 Unit 2 Control Room Ventilation System (2-HVE-13B) Filter Testing Surveillance (OSP-25.04)  
 Data Results, July 2012 and Feb 2011  
 Unit 2 ECCS Ventilation System (2-HVE-9B) Filter Testing Surveillance Data (OSP-25.04) Data  
 Results, July 2012  
 Unit 2 ECCS Ventilation System, (2-HVE-9A) Filter Testing Surveillance Data (OSP-25.04) Data  
 Results, December 2010 and April 2009.

Corrective Action Program (CAP) Documents

Action Request Number (AR) 00566133 – Entry Into 1-AOP-06.04 Uncontrolled Release of  
 Radioactive Gas  
 AR 0578440 - U2 CCW Tritium above MDA  
 AR 01613963 – Evaluate Potential for Unmonitored Release  
 AR 01667461 - Liquid Radwaste Monitor Out of Service >30 Days

AR 01693649 - Liquid Radwaste Monitor Out of Service >30 Days  
 AR 01778343 - Positive Tritium Results From Tell-Tale Drains

### **Section 2RS07: Radiological Environmental Monitoring Program**

#### Procedures and Guidance Documents

Chemistry Operating Procedure (C)-200, Offsite Dose Calculation Manual, Revision (Rev. 37)  
 Laboratory Procedure G, Gamma Spectroscopy, Rev. 3  
 Sampling Procedure 1, Collection of Air Particulates and Radioiodines, Rev. 10  
 Sampling Procedure 4, Collection of Surface Water, Rev. 6  
 Technical Memorandum 3, Lower Limit of Detection for Analyses, Rev. 5  
 0-SMI-57.01, Meteorological Data System Semi-annual Calibration, Rev. 2

#### Records and Data Reviewed

2010 Annual Radioactive Effluent Release Report, 02/28/2011  
 2011 Annual Radioactive Effluent Release Report, 03/01/2012  
 2010 Annual Radiological Environmental Operating Report for Calendar Year 2010, 04/19/2011  
 2010 Annual Radiological Environmental Operating Report for Calendar Year 2011, 04/24/2012  
 Work Order (WO) 38024846, Rain Gauge; Switch Defective/Replace,  
 WO 39004819, VZ/ZR-57-1, Recorder Not Advancing, 01/21/2011  
 WO 39004820, VZ/ZR-57-1, Recorder Not Advancing, 01/21/2011  
 WO 39024753, Met tower Semi-Annual Calibrations, 06/02/2010  
 WO 40058344, I&C Support Package for EC 246531, Met Tower Replacement, 01/17/2011  
 WO 40094818, FSAR/PM0 110/Met Tower Semiannual Calibrations, 03/15/2012  
 WO 40049546, FSAR/PM0 110/Met Tower Semiannual Calibrations, 08/26/2011  
 Calendar Year (CY) 2010 Annual Radiological Environmental Operating Report – DOE-  
 MAPEP 22 and DOE-MAPEP 23 Results  
 CY 2011 Annual Radiological Environmental Operating Report – DOE-  
 MAPEP 24 and DOE-MAPEP 25 Results  
 St Lucie (A) and (B) Data Recovery Summary, Year to Date – August 2012  
 Florida Power and Light Company, St Lucie Nuclear Plant, Joint Frequency Distribution Report,  
 January 1, 2012, to March 31, 2012  
 10 CFR 50.75(g) documentation, Unit 1 yard sump and east storm drains, 12/16/2011  
 L-2003-081, Periodic Update of Population Data Within Ten and Fifty Miles of Plant St Lucie,  
 4/14/2003  
 L-2008-047, Periodic Update of Population Data Within Ten Miles of St Lucie Plant, 3/26/2008

#### Corrective Action Program (CAP) Documents

Plant St. Lucie Nuclear Oversight Report Number (No.) PSL-10-030, Radiological  
 Environmental Monitoring and Environmental Protection, 08/25/2010  
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant  
 Surveillance Program Semi-annual self-assessment: July – December 2010  
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant  
 Surveillance Program Semi-annual self-assessment: January – June 2011  
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant  
 Surveillance Program Semi-annual self-assessment: July – December 2011  
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant  
 Surveillance Program Semi-annual self-assessment: January – June 2012  
 AR 01778343, Positive tritium results from tell-tale drains

AR 01630313, Catch Basin 70 and 71 had elevated tritium  
 AR 01781195, Elevated tritium in ground water well  
 AR 01616464, Monitoring well U2 MW-001 had H-3 increase if 3x  
 AR 01717205, Drainage of ECCS Fluid to the yard sump  
 AR 01688791, New garden was identified at 2.0 miles WSW  
 AR 01723444, REMP MAPEP confirm result for gross beta air false positive  
 AR 01794526, REMP MAPEP confirm result for Cs-137 in vegetation false positive  
 AR 01688500, REMP sampling station H33 Pump Failed  
 AR 01688592, REMP sampling station H30 Pump Failed  
 AR 01721217, TLD missing from REMP location S-5  
 AR 01808669, REMP sampling station H32 vacuum pump failed  
 AR 00571350, PSL procedure does not contain DOE MAPEP method

#### Records and Data Reviewed

Liquid Status Summary Report – Site Liquid Dose Data for the 3<sup>rd</sup> Quarter CY 2012  
 Gas Status Summary Report – Unit 1 and Unit 2 Maximum Individual NNG Dose Summary Data  
 for the 3<sup>rd</sup> Quarter CY 2012  
 Calendar Year (CY) 2011 Estimated Dose Report, Liquid and Gaseous Monthly, Quarterly,  
 Annual Radioactive Effluent Release Report Data Summary, 01/12/2012

#### CAP Documents

AR 01719484, EPD dose alarm  
 AR 01613051, Dose rate alarm  
 AR 01767324, PD alarms outside RCA  
 AR 01612274, Dose alarm  
 AR 01619542, Individual received dose alarm  
 AR 01719564, EPD dose alarm  
 AR 01621641, Accumulated dose alarm  
 AR 01611561, Dose alarm  
 AR 01745213, Dose rate alarm  
 AR 01616707, U2 pipe tunnel dose rate alarm  
 AR 01727385, EPD dose rate alarm  
 AR 01728437, EPD dose rate alarm  
 AR 01731313, Dose rate alarm

#### **Section 40A1: PI Verification**

##### Records and Data Reviewed

Liquid Status Summary Report – Site Liquid Dose for the 3<sup>rd</sup> Quarter CY 2012  
 Gas Status Summary Report – Unit 1 and Unit 2 Maximum Individual NNG Dose Summary Data  
 For the 3<sup>rd</sup> Quarter CY 2012  
 Calendar Year (CY) 2011 Estimated Dose Report, Liquid and Gaseous Monthly, Quarterly,  
 Annual Radioactive Effluent Release Report Data Summary, 01/12/2012

##### CAP Documents

A/R 01719484, EPD dose alarm  
 AR 016113051, Dose rate alarm  
 AR 01767324, PD alarms outside RCA  
 A/R 01612274, Dose Alarm



A/R 01619542, Individual received dose alarm  
A/R 01719564, EPD dose alarm  
A/R 01621641, Accumulated dose alarm  
A/R 01611561, Dose alarm  
A/R 01745213, Dose rate alarm  
A/R 01616707, U2 pipe tunnel dose rate alarm  
A/R 01727385, EPD dose rate alarm

A/R 01728437, EPD dose rate alarm  
A/R 01731313, Dose rate alarm

### **Section 40A3: Follow-up of Events and Notices of Enforcement Discretion**

#### Miscellaneous

IEE 00411414, Equivalency Evaluation for Rochester Instrument Systems Model SC-1330  
Square Root Extractors  
Root Cause Report, AR 1773238, Wiring Error – Aux Feed Flow Square Root Extractor St.  
Lucie Nuclear Plant, dated 06/05/2012

#### Drawings

8770-B-327, Aux. FW A & B Flow & Pressure Control Wiring Diagram, Sheet 601, Rev. 16  
8770-G-080, Flow Diagram Feedwater & Condensate Systems, Sheet 4, Rev. 43

#### Action Requests Reviewed During Inspection

AR 1773238, FT-09-2A Failed During Monthly Flow Test  
AR 1789243, ADM-78.01 Post Maintenance Testing

#### Procedures

ADM-78.01, Post Maintenance Testing, Rev. 43

#### Work Orders

33018761-01/02, FF-23-15: Repair/Replace CR03-3649  
37002574-03, FF-14-2: Install Bracket, Mount and Wire  
38021889-01, MTS2 018 F-23-12/PIC-23-2 S/G B/D  
40079313-01, Unit 1 AFW Flow Monthly High Risk Contingency  
40149708-01, TS/U1: FI-09-2A AFW Flow Monthly CH Check  
40160852-01, FT-09-2A Step Change

#### Action Request Generated

AR 1828394, Work Package Quality Corrective Action Required for Unit 1 AFW Transmitter

**Section 4OA5: Unit 2 Extended Power Uprate (IP 71004 Power Uprate)**

<u>Inspection Procedure</u>	<u>Inspection Report</u>	<u>Description and IP 71004 Section</u>
71004, Power Uprate	12-04, 4OA5.3	SL2 SER Review, 2.02.a
	12-04, 1R17	SL2 Evaluation of Changes, Tests, or Experiments and Permanent Plant Modifications, 2.01.b
	12-04, 1R18	SL2 Review Plant Changes, 2.02.b
	12-05, 1R18	SL2 Review Plant Changes, 2.02.b
	12-05, 1R19	SL2 Post Maintenance Tests, 2.02.c
	12-05, 4OA5.3	SL2 Major Tests, 2.02.d
	12-05, 4OA5.3	SL2 Power Ascension, 2.02.e
	12-04, 4OA5.3	SL1 and SL2 Flow Accelerated Corrosion, 2.01.f
	12-04, 4OA5.3	SL1 and SL2 SER Review for NRC Commitments, 2.01.g
	12-05, 4OA2	SL2 Problem Identification and Resolution, 2.01h
	12-04, 4OA2	SL1 and SL2 Problem Identification and Resolution, 2.01h

**Section 4OA5.3: TI-188 Inspection of Near-Term TF Recommendation 2.3 Seismic Walkdowns**Drawings

2998-G-667, Sheet 3, Diesel Generator Building Hatch Cover & Misc Details – M&R, Revision 6  
 2998-G-795, Sheet 1, Reactor Building Platforms, Revision 6  
 2998-G-864, Sheet 1, HVAC – Reactor Building, Revision 11  
 2998-G-865, Sheet 2, HVAC – Reactor Building, Revision 11

Other Documents

EPRI 1025286 "Seismic Walkdown Guidance for Resolution of Fukushima Near-Term Task Force Recommendation 2.3  
 Saint Lucie Seismic Walkdown Equipment List (SWEL)  
 Seismic Evaluation Training Course Certifications for a number of licensee staff  
 Area Walk-By Checklist and Seismic Walkdown Checklists for the referenced SWEL items