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

January 31, 2014

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

SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT 05000335/2013005, 05000389/2013005, 05000335/2013502 AND 05000389/2013502

Dear Mr. Nazar:

On December 31, 2013, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on January 9, 2014, with Mr. Coffey and other members of your staff.

One self-revealing finding and one NRC-identified finding of very low safety significance (Green) were identified during this inspection. Both of these findings involved violations of NRC requirements. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest these 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 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 Plant.

As a result of the Safety Culture Common Language Initiative, the terminology and coding of cross-cutting aspects were revised beginning in calendar year (CY) 2014. New cross-cutting aspects identified in CY 2014 will be coded under the latest revision to Inspection Manual Chapter (IMC) 0310. Cross-cutting aspects identified in the last six months of 2013 using the previous terminology will be converted to the latest revision in accordance with the cross-reference in IMC 0310. The revised cross-cutting aspects will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the CY 2014 mid-cycle assessment review.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, “Public Inspections, Exemptions, Requests for Withholding,” 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/

Daniel W. Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000335/2013005, 05000389/2013005, 05000335/2013502, 05000389/2013502
w/Attachment: Supplemental Information

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Letter to Mano Nazar from Daniel W. Rich dated January 31, 2014.

SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT 05000335/2013005, 05000389/2013005, 05000335/2013502 AND 05000389/2013502

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REGION II

Docket Nos:	50-335, 50-389
License Nos:	DPR-67, NPF-16
Report Nos:	05000335/2013005, 05000389/2013005, 05000335/2013502, and 05000389/2013502
Licensee:	Florida Power & Light Company (FP&L)
Facility:	St. Lucie Plant, Units 1 & 2
Location:	6501 South Ocean Drive Jensen Beach, FL 34957
Dates:	October 1, 2013 to December 31, 2013
Inspectors:	T. Morrissey, Senior Resident Inspector J. Reyes, Resident Inspector P. Capehart, Senior Operations Engineer (Section 1R11.3) R. Carrion, Senior Reactor Inspector (Sections 1R08) W. Pursley, Health Physicist (Sections 2RS2 and 4OA1.2) C. Dykes, Health Physicist (Section 2RS5) W. Loo, Senior Health Physicist (Sections 2RS1, 2RS3, 2RS4 and 2RS5) J. Rivera, Health Physicist (Sections 2RS3 and 2RS4) J. Laughlin, Emergency Preparedness Inspector (Section 1EP4)
Approved by:	Daniel W. Rich, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2013005, 05000389/2013005; 10/01/2013 – 12/31/2013; St. Lucie Nuclear Plant, Units 1 & 2; Identification and Resolution of Problems, In-Plant Airborne Radioactivity Control and Mitigation

The report covered a three month period of inspection by the resident inspectors, regional specialist inspectors, and a headquarters specialist inspector. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, or Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated June 2, 2011. The cross-cutting aspect was determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated October 28, 2011. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. The inspectors identified a non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action. Specifically, the licensee failed to identify localized corrosion on the discharge piping for the 1C auxiliary feedwater pump that exceeded the licensee's acceptance criteria for minimum pipe wall thickness. The licensee entered the issue into the corrective action program (CAP) as action request (AR) 1913575. Corrective actions included replacing the degraded sections of pipe and conducting analyses to verify past operability of the degraded piping.

The performance deficiency was more than minor because if left uncorrected, it had the potential to lead to a more significant safety concern. Specifically, unmitigated corrosion of the AFW piping could result in through-wall leaks, affect structural integrity of the piping, and ultimately result in inoperability of the system. Using Table 2 of Manual Chapter 0609.04, Significance Determination Process (SDP) Initial Characterization of Findings dated June 19, 2012; the inspectors concluded the finding affected the mitigating systems cornerstone. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, dated June 19, 2012. The finding was determined to be of very low safety significance (Green) since the AFW system remained operable and was able to perform its function. The inspectors determined the cause of this finding was associated with a cross cutting aspect of minimizing longstanding equipment issues in the resources component of the human performance area. Specifically, the licensee had not provided adequate resources to address longstanding Unit 1 AFW system corrosion issues [H.2(a)]. (Section 4OA2.4)

Cornerstone: Occupational Radiation Safety

Green. A self-revealing non-cited violation (NCV) of 10 CFR Part 20.1703(a) was identified for the use of respiratory protection equipment that had not been certified as safe by the National Institute for Occupational Safety and Health (NIOSH). The licensee's use of respiratory protection equipment in a radiologically controlled area that had not been tested and certified by NIOSH or that had not obtained prior authorization from the NRC to use respiratory equipment not certified by NIOSH was a performance deficiency. The licensee discontinued use of the respiratory protection equipment and the issue was entered into the licensee's corrective action program under action request (AR) 1719479.

The finding was more than minor because it was associated with the Occupational Radiation Safety cornerstone attribute of "Equipment and Instrumentation" and adversely affected the cornerstone objective of protecting worker health and safety from exposure to radiation. When using non-NIOSH approved respirators in a radiologically controlled area, the potential existed to put workers in a situation that may be more hazardous than the radiological dangers that the respirator is meant to protect against (e.g. loss of air flow). The finding was determined to be of very low safety significance (Green) because it was not related to As Low As Reasonably Achievable (ALARA) planning, there was no overexposure nor potential for overexposure, and the licensee's ability to assess dose was not compromised. A cross cutting aspect was not assigned because the performance characteristic was corrected and eliminated before the inspectors identified the issue and is therefore not reflective of present licensee performance. (Section 2RS3)

Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period in a shutdown condition for a planned refueling outage (RFO). At the completion of the RFO, the reactor was restarted on November 7. On November 10, power was rapidly reduced from approximately 49 percent to 12 percent rated thermal power (RTP) due to a main generator digital electrohydraulic (DEH) control oil system leak. On November 12, the unit was manually tripped from approximately 90 percent RTP when another leak developed in the DEH system. The unit was restarted on November 13 and reached 100 percent RTP on November 15. On December 11, the unit was shutdown to support a planned replacement of a degrading 1A2 reactor coolant pump (RCP) seal. On December 18, the unit was restarted and reached 100 percent power on December 19. The unit was at 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent RTP. On November 14, the unit was manually tripped when the operators noticed lowering B steam generator water level due to an unplanned closure of a feedwater valve. The unit was restarted on November 16 and reached 100 percent RTP on November 17. On December 4, the 2B heater drain pump tripped which resulted in a downpower to 94 percent RTP. Reactor power was restored to 100 percent RTP on December 6, where it remained through the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity (Reactor-R)

1R01 Adverse Weather Protection

Seasonal Winter Weather Conditions

a. Inspection Scope

The inspectors reviewed implementation of 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 walk down 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 ensure 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 1 and Unit 2 emergency diesel generator (EDG) rooms
- Unit 1 and Unit 2 refueling water tank areas
- Unit 1 and Unit 2 main feed isolation valve areas
- Unit 1 and Unit 2 auxiliary feed water (AFW) pump areas

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted four partial alignment verifications of the 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 identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and that those issues were documented in the corrective action program (CAP). Documents reviewed are listed in the Attachment.

- 1A and 1C component cooling water (CCW) trains while 1B CCW pump and heat exchanger were out of service (OOS) for planned maintenance
- 1A EDG, 1A start-up transformer (SUT) and 1A3 emergency service 4160-volt switch gear, while the 1B SUT and the 1B EDG were OOS
- 1A EDG after restoration from testing, and 1A &1B AFW pumps while 1C AFW pump was OOS
- 2A high pressure safety injection (HPSI) pump, 2A containment spray pump, and 2A refueling water tank suction line to the 2A emergency core cooling system (ECCS) while the 2B ECCS was OOS

b. Findings

No findings were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted a detailed walkdown of the alignment and condition of the Unit 1 safety injection tank (SIT) system to verify its capability to meet its design basis function. The inspectors utilized licensee procedures 1-NOP-03.31, Safety Injection Tanks Initial Alignment and 1-NOP-03.03, Safety Injection Tank Normal Operation, as well as other licensing and design documents to verify the system alignment was correct. During the walkdown, the inspectors verified 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 (WOs). 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

Fire Area Walkdowns

a. Inspection Scope

The inspectors toured the following four 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. Documents reviewed are listed in the Attachment. The following areas were inspected:

- Unit 2, 2A and 2B motor generator room and immediate area
- Unit 2, 2B EDG room
- Unit 2, 2A switchgear room
- Unit 1, HPSI and containment spray pump rooms

b. Findings

No findings were identified.

1R06 Flood Protection Measures

Internal Flooding

a. Inspection Scope

The inspectors conducted a walkdown of the Unit 2 charging pump area 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 Systems, Structures, and Components (SSCs). 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, floor drains, and operability of sump pump systems.

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors interviewed engineering personnel responsible for 1A and 1B intake cooling water (ICW) heat exchanger monitoring and performance. The inspectors observed the end of cycle as-found heat exchanger conditions on both the inlet and outlet seawater side of the 1B heat exchanger as it was opened. Additionally, the inspectors reviewed the as-found conditions of the 1A ICW heat exchanger as documented by engineering personnel. The inspectors reviewed the eddy current test results and verified the required tubes were plugged. The inspectors verified that periodic maintenance activities were conducted in accordance with licensee procedure 0-PMM-14.01, Component Cooling Water Heat Exchanger Clean and Repair. The inspectors verified the heat exchangers can perform its safety related function by assessing documentation of licensee inspections. The inspectors walked down portions of the system for signs of degradation and to assess overall material condition, as well as to monitor system parameters for proper operation. The inspectors verified that significant heat sink issues were being identified and entered into the CAP. This inspection completes two samples under this inspection procedure.

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities

From December 11, 2013, through December 27, 2013, the inspectors conducted an in-office review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, steam generator tubes, emergency feedwater systems, risk-significant piping and components and containment systems in Unit 1.

The inspections described in Sections 1R08.1, 1R08.2, 1R08.3, 1R08.4 and 1R08.5 below constituted one inservice inspection sample as defined in Inspection Procedure 71111.08-05.

.1 Non-Destructive Examination (NDE) Activities and Welding Activities

a. Inspection Scope

The inspectors reviewed records of the following non-destructive examinations required by the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) to verify compliance with Section XI and Section V of the ASME BPVC of record for Saint Lucie Unit 1 (2001 Edition, with 2003 Addenda). The inspectors also verified that any relevant indications and defects were dispositioned in accordance with the requirements of the ASME BPVC or an NRC-approved alternative requirement.

- Liquid Penetrant (PT) Examination of Combined High Pressure (HP) & Auxiliary HP Headers to Loop 1B2, SI-218-SW-2, Pipe to Elbow
- Ultrasonic (UT) Examination of Reactor Coolant Piping, Loop B from the Reactor Pressure Vessel (RPV) to Steam Generator (SG)-1B, RC-123-1-503, Pipe to Elbow
- Ultrasonic (UT) Examination of Reactor Coolant Pump 1A1, 01-017-S-001 thru -016, Reactor Coolant Pump Studs
- VT-3 (Visual) Examination of SIH-233: Sliding Base Support, Loop 1B2 Safety Injection Piping, Inside Containment
- Magnetic Particle (MT) Examination of MS-3-1-SW-9: Pipe to Relief Nozzle on Main Steam Line 1B1, Outside Containment
- VT-1 (Visual) Examination of Component Cooling Water - From Containment Cooling Unit 1D to Penetration 17, CC-1899-6173 IA: Integral Attachment

During non-destructive surface and volumetric examinations performed since the previous refuelling outage, the licensee did not identify any recordable indications that were accepted for continued service through analytical methods. Additionally, welding samples for modifications, repairs, or replacements on pressure boundary risk-significant systems were not available for review at the time of the inspection to verify conformance to ASME Code requirements or an NRC-approved alternative. Therefore, no NRC review was completed for these attributes of the inspection procedure.

b. Findings

No findings were identified.

.2 Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

For the Unit 1 reactor vessel upper head, no examination was required pursuant to 10 CFR 50.55a(g)(6)(ii)(D) for the last refueling outage. Therefore, no NRC review was completed for this inspection procedure attribute.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control (BACC)

a. Inspection Scope

The inspectors reviewed the licensee's BACC program activities to ensure implementation of commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary," and applicable industry guidance documents. Specifically, the inspectors performed an in-office record review of procedures and the results of the licensee's containment walk-down inspections performed during the autumn refueling outage (SL1-25). The resident inspectors conducted independent walkdowns of portions of the reactor building, including the reactor coolant system (RCS) loop piping within the bio-wall (including the reactor coolant pump and SG platforms), safety injection piping, safety injection tanks, and pressurizer piping. Outside of the reactor building, the inspectors walked down the low-pressure and high-pressure safety injection systems and all three charging system trains.

The inspectors reviewed the following Action Requests and the associated engineering evaluations and corrective actions performed for boric acid found on RCS piping and components to determine if the licensee properly assessed the effects of corrosion-induced wastage on structural or pressure boundary integrity.

- Action Request (AR) 01733274, Engineering Disposition of RCS leak from Reactor Vessel Head In-core Instrumentation Flange #8
- AR 01908225-01, Engineering Disposition of an Active RCS Boric Acid Packing Leak Identified on V1208, Root Valve for LT-1110Y, 09/29/2013
- AR 01909433-01, Engineering Disposition of RCS Leak from the #8 In-core Instrumentation Flange on the Reactor Head
- AR 01910671-01, Engineering Disposition of Boric Acid Residue in Contact with the Base of the 1B1 Reactor Coolant Pump and Casing
- AR 01911875-01, Engineering Disposition of Boric Acid in Contact with Pump Studs and Flange Area

- AR 01917447-01, Engineering Disposition of Active Boric Acid Leak at Fitting of 5-way Manifold Valve VPDIS-02-1 for PDIS-02-1
- AR 01917448-01, Engineering Disposition of Active Boric Acid Leak Observed at the Packing Nut of Unit 1 V3811 Vent Valve

These activities were performed to evaluate compliance with the licensee's BACC program requirements, and to verify that degraded or non-conforming conditions, such as boric acid leaks, were properly identified, evaluated, and corrected in accordance with the licensee's BACC and corrective action programs and were consistent with the requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI.

b. Findings

No findings were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

The inspectors reviewed results of the eddy current examination activities performed in the Unit 1 steam generators during refueling outage SL1-25 to verify compliance with the licensee's Technical Specifications, ASME Section XI, and Nuclear Energy Institute (NEI) 97-06, Steam Generator Program Guidelines. The inspectors reviewed documentation associated with the steam generator inspections and integrity assessments as described below.

The inspectors reviewed the scope of the eddy current examinations to verify that known and potential areas of tube degradation were inspected. The inspectors also verified that inspection scope expansion criteria were implemented based on inspection results as directed by the Electric Power Research Institute (EPRI) Pressurized Water Reactor Steam Generator Examination Guidelines, Revision 7.

The inspectors compared the recent eddy current examination results with the last Condition Monitoring and Operational Assessment report to assess the licensee's prediction capability for maximum tube degradation and number of tubes with indications. The inspectors verified that the licensee's evaluation was conservative and that current examination results were bound by the Operational Assessment projections. The inspectors reviewed the previous Operational Assessment to verify the licensee met the inspection frequency established in the plant Technical Specifications and had evaluated the acceptability of these steam generators to meet the tube integrity performance criteria until the next scheduled inspection.

The inspectors also compared past examination results discussed in the latest Degradation Assessment with the recent eddy current examination results to verify that any new degradation mechanisms were identified and evaluated before plant startup. The review of eddy current examination results included the disposition of potential loose part indications on the steam generator secondary side to verify that corrective actions

for evaluating and retrieving loose parts were consistent with the EPRI Guidelines. The inspectors also reviewed a sample of primary-to-secondary leakage data for the last Unit 1 operating cycle to obtain reasonable assurance that operational leakage in all steam generators remained below the detection or action level thresholds during the previous operating cycle.

In addition, the inspectors reviewed a sample of site-specific Examination Technique Specification Sheets (ETSSs) to ensure that their qualification and site-specific implementation were consistent with Appendix H or I of the Electric Power Research Institute Pressurized Water Reactor Steam Generator Examination Guidelines, Revision 7. The reviewed ETSSs were selected based on plant-specific degradation mechanisms of interest to the inspectors and industry operating experience. The inspectors selected bobbin probe ETSSs qualified for detection and sizing of loose part wear in tube freespan locations, thinning in tube support plates and top-of-tubesheet, and wear at tube support plates and anti-vibration bars. The inspectors also selected rotating and array probe ETSSs for detection of circumferential and axial stress corrosion cracking on the internal and external surfaces of the tubes at the expansion transition area.

Based on the review of eddy current examination results for steam, the inspectors confirmed that no new degradation mechanisms were identified, none of the SG tubes examined met the criteria for in-situ pressure testing, and none of the indications left in service required repair.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI-related problems, which were identified by the licensee and entered into the corrective action program, to verify that the licensee was identifying problems at an appropriate threshold and entering them in the corrective action program for resolution. The inspectors performed this review to ensure compliance with 10 CFR Part 50, Appendix B, Criterion XVI, “Corrective Action,” requirements. The sample of corrective action documents selected for review included the licensee’s evaluation of recent operating experience information applicable to the plant. The inspection sample also included records from a follow-up examination of reactor vessel head in-core instrumentation penetration number 8, to assess the corrective actions for a boric acid indication identified in the previous Unit 1 refueling outage (SL1-24). Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On November 18, 2013, the inspectors observed and assessed licensed operator actions during a licensed operator continuing training evaluated exercise using the control room simulator. The simulated scenario involved a steam generator tube leak and rupture, a stuck control element assembly, and a stuck-open steam bypass control valve. Additionally, the scenario included an Emergency Alert classification for the loss of the reactor coolant system (RCS) barrier, and notification to the State and the NRC. Documents reviewed are listed in the Attachment. The inspectors also reviewed simulator fidelity and specifically evaluated the following attributes related to the operating crews' performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of abnormal and emergency operation procedures, and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate technical specifications (TS) actions, regulatory reporting requirements, and emergency plan classification and notification
- Crew overall performance and interactions
- Effectiveness of the post-evaluation critique

b. Findings

No findings were identified.

.2 Control Room Observations

a. Inspection Scope

The 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. Specifically, the inspectors observed activities in the control room during the following five evolutions:

- November 7, Unit 1 Reactor startup after the RFO
- November 14, Unit 2 Post reactor trip during execution of emergency operating procedures EOP-1 and EOP-2
- November 16, Unit 2 Reactor startup after repairing the main feed isolation valve (MFIV) circuitry
- December 11, Unit 1 Reactor shutdown for a 1A2 RCP maintenance outage

- December 13, Unit 1 Drain down to reduced inventory for repairing the 1A2 RCP

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

b. Findings

No findings were identified.

.3 Annual Review of Licensee Requalification Examination Results

a. Inspection Scope

On September 20, 2013, 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 Requalification Program." These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix I, "Operator Requalification Human Performance Significance Determination Process."

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the performance data and associated AR for the system 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 10 CFR 50.65, The Maintenance Rule (MR). The inspectors focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of MR a(1) and a(2) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective

maintenance activities. The inspectors 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. Documents reviewed are listed in the Attachment.

- AR 1891144, Unit 1 and Unit 2 Control Room Air Conditioners Maintenance Rule Scoping

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews, plant walkdowns, and control room inspections of the licensee's on-line and shutdown 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. Documents reviewed are listed in the Attachment.

- Unit 1 RFO, Mode 5 shutdown safety assessment (SSA) while the RCS was at atmospheric pressure and management risk actions included a dedicated operator for closing the pressurizer vent lines, time to boil was 12 minutes, and the 1B EDG was OOS for testing
- Unit 1 RFO, SSA following emergent equipment issues, during offloading the core both spent fuel pool pumps momentarily placed OOS due to pump cavitation, and the 1B EDG was OOS for maintenance
- Unit 2, On-line risk assessment (OLRM) with 1B emergency diesel generator inoperable for testing, ongoing maintenance in the St. Lucie switch yard, and the U2 station blackout crosstie unavailable
- Unit 1 RFO, Mode 6 SSA during mid-loop operations with RCS time to boil equal to 30 minutes, a dedicated containment closure crew established and two shutdown cooling trains available

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the following eight interim dispositions and operability determinations or functionality assessments to ensure that they were properly supported and the affected SSCs remained available to perform their safety function with no increase in risk. The inspectors reviewed the applicable UFSAR sections, and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- AR 1739338, Unit 1 1B Low Pressure Safety Injection Pump Seal Leakage
- AR 1917480, 1A EDG Unexpected Safeguards Start
- AR 1914254, Unit 1 #1 Control Element Assembly Extension Bent
- AR 1918216, 1C AFW Pump Trip and Throttle valve MV-08-03 Failed to Open
- AR 1917566, 1C AFW Steam Admission valve MV-08-13 Torque Switch Contacts Open During Open Stroke
- AR 1918435, Unit 1 RCP 1A2 Seal Degradation
- AR 1916684, Unit 1 ICW Header Thru-wall Pipe Flaw
- AR 1928517, Wind Generated Back Pressure Affecting EDG Radiator Performance

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed the engineering change (EC) documentation for the permanent plant modification EC 277251, St. Lucie Nuclear Extended Power Up-rate (EPU) Unit 1 Steam Bypass Control System Valve Replacement. The modification replaced the turbine bypass and steam dump valves and valve operators which were modified during the EPU outage, and subsequently developed significant operational issues. The inspectors reviewed associated plant drawings and UFSAR documents impacted by these modifications and discussed the changes with licensee personnel to verify the installation was consistent with the modification documents. Additionally, the inspectors verified that any issues associated with the modification was identified and entered into the licensee's CAP.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the seven maintenance WOs listed below, the inspectors reviewed the 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. Documents reviewed are listed in the Attachment.

- WO 40044115, 1B EDG 12 Year PM
- WO 36015379, 1B AFW pump motor replacement
- WO 40158465, 1A HPSI pump mechanical seal replacement
- WO 40155882, 40155883, 40158644, 40145231, 40145232, and 40160080, 40087783, Unit 1 ICW valve strokes, ICW header and CCW heat exchanger pressure leak tests, and 1B ICW pump code run test
- WO 40195773 and 40213914, Unit 2 steam bypass control system modification testing
- WO 40272211 and 40278875, Unit 2 main feedwater isolation valve testing
- WO 40265388, Repair 1C AFW pump steam admission valve MV-08-13

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 1 Refueling Outage SL1-25

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 (RFO) SL1-25 meetings including the 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 SL1-25 in accordance with licensee procedure OM-AA-101-1000, Shutdown Risk Management, to verify whether a defense in depth concept was in place to ensure safe operations and avoid unnecessary risk. In addition, the inspectors regularly monitored OCC activities, and interviewed responsible OCC management, to ensure system, structure, and component configurations and work scope were consistent with 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 spent fuel pool during the shutdown period including the intake cooling water system, component cooling water system, and spent fuel pool 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 spent fuel pool cooling system operation
- Evaluated implementation of reactivity controls
- Reviewed control of containment penetrations
- Examined foreign material exclusion controls put in place inside containment (e.g., around the refueling cavity, near sensitive equipment and RCS breaches) and around the spent fuel pool (SFP)
- Verified worker 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 1-GMM-68.02, Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches.

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 walk down while Unit 1 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 in accordance with the following plant procedures:

- 1-PTP-91, Reload Startup Physics Testing
- 1-GOP-302, Reactor Startup Mode 3 to Mode 2
- 1-GOP-201, Reactor Plant Startup Mode 2 to Mode 1

Corrective Action Program

The inspectors reviewed ARs generated during SL1-25 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 (QA) daily surveillances of outage activities.

b. Findings

No findings were identified.

.2 Unit 1 Planned Outage: 1A2 RCP Degraded Seal Replacement

a. Inspection Scope

On December 11, Unit 1 was shutdown to replace the 1A2 RCP seal package. The seal package is made up of three stages. After starting 1A2 RCP at the conclusion of RFO SL 1-25 in November, the lower stage differential pressure slowly degraded. Shortly thereafter, when there were indications that the middle stage was also degrading, the licensee made plans to shut down the unit to replace the seal. The RCP seal maintenance required that the RCS be cooled down to Mode 5 (<200F), depressurized to atmospheric pressure, and RCS level be lowered to just above the RCS hot leg elevation.

Outage Planning, Control and Risk Assessment

The inspectors reviewed the licensee's outage risk control plan and schedule to verify that the licensee had appropriately considered risk, industry experience and previous site specific problems.

Monitoring of Shutdown Activities

The inspectors observed portions of the cooldown process to verify that technical specification cooldown restrictions were followed. The inspectors conducted a containment walkdown after the shutdown to assess the condition of the systems within containment that are inaccessible with the unit at power. The inspectors performed walkdowns of important systems and components used for decay heat removal from the reactor core during the shutdown period including the intake cooling water system and CCW 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:

- 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 operation
- Evaluated implementation of reactivity controls
- Examined containment foreign material exclusion controls put in place for the limited work inside containment

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 verified containment integrity was properly established. The inspectors performed a containment closeout inspection prior to reactor plant start up. The inspectors witnessed portions of the RCS heat up, reactor startup, and power ascension. On December 18, the inspectors verified that startup activities were performed in accordance with licensee general operating procedure 1-GOP-302, Reactor Startup Mode 3 to Mode 2.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following seven surveillance tests to verify that the tests met TS requirements, 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 standby alignment required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP. Documents reviewed are listed in the Attachment.

In-Service Tests:

- 2-OSP-09.01B, 2B Auxiliary Feedwater Pump Code Run and OP-2-0010125A, Surveillance Data Sheets (SE-09-3, MV-09-10, and MV-09-14) valve strokes

Surveillance Tests:

- 1-SMM-08.08, Main Steam Safety Valve Set Point Surveillance Using Furmanite Trevitest Mark V111-2 Equipment
- 1-OSP-69.17, ESF – 18 Month Surveillance For RAS With SDC in Service – Both Trains
- 1-OSP-30.17, Stroke Testing Of The SIT Discharge And SI LOOP Check Valves
- Unit 1 ECCS full flow testing (1-OSP-03.01A, 1A HPSI Pump Safeguards Full Flow Test; 1-OSP-03.01B, 1B HPSI Pump Safeguards Full Flow Test; and 1-OSP-03.02B, 1B LPSI Pump Safeguards Full Flow Test)
- 1-OSP-68.13B, ESF 18-Month Surveillance for SIAS, CIS, CSAS Train B

Containment Isolation Valve Leak Test:

- 1-OSP-68.02, Local Leak Rate Test (penetration P-7, primary makeup water)

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 ML12355A762, ML13039A299, ML13050A036, ML12362A396, and ML13120A271 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.

2. RADIATION SAFETY (RS)

Cornerstones: Occupational Radiation Safety (OS)

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

Hazard Assessment and Instructions to workers: During facility tours, the inspectors directly observed labeling of radioactive material and postings for radiation areas, high radiation areas (HRAs), and Very High Radiation Areas (VHRAs) in the radiologically controlled area (RCA) of the SL1 containment, SL1&2 auxiliary buildings, Independent Spent Fuel Storage Installation (ISFSI) and radioactive waste (radwaste) processing and storage locations to include the dry storage warehouse. The inspectors directly observed conduct of licensee radiation surveys for selected RCA areas. The inspectors reviewed survey records for several plant areas including surveys for alpha emitters, hot particles, airborne radioactivity, gamma surveys within areas of high dose rate gradients, pre-job surveys for upcoming tasks and the ISFSI. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. For selected SL1 RFO 25 (SL1-25) work activities, the inspectors attended pre-job briefings and reviewed radiation work permit (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers. This included work activities associated with SL1 V-4111, SL1 reactor cavity surveys and radiography.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected SL1&2 Locked High Radiation Area (LHRA) and VHRA locations to include SL1 containment. Changes to procedural guidance for LHRA and VHRA controls were discussed with health physics (HP) supervisors. Controls and their implementation for storage of irradiated material within the spent fuel pool (SFP) were reviewed and discussed. Established radiological controls (including airborne controls) were evaluated for selected SL1-25 tasks to include SL1 V-4111 work activities, SL1 reactor cavity surveys and radiography. Areas where dose rates could change significantly as a result of plant shutdown and refueling operations were also reviewed and discussed with cognizant licensee representatives.

Occupational workers' adherence to selected RWPs and HP technician (HPT) proficiency in providing job coverage were evaluated through direct observations and interviews with cognizant licensee staff. Electronic dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for selected SL1-25 work activities. ED alarm logs were reviewed and worker response to dose and dose rate alarms during selected SL1-25 work activities were evaluated. HPT coverage and actions at the SL1 containment access point were reviewed and discussed in detail with cognizant licensee representatives.

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA control point using small article monitors (SAM)s, personnel contamination monitors (PCM)s, and portal monitor (PM) instruments. The inspectors discussed equipment sensitivity, alarm setpoints, and release program guidance with cognizant licensee staff. In addition, the inspector reviewed and observed controls for hand surveying large tools and equipment for release from the RCA control point. The inspectors compared recent data required by Title 10 of the Code of Federal Regulations (CFR) Part 61 for the Dry Active Waste (DAW) radioactive waste stream with radionuclides used in calibration sources to evaluate the appropriateness and accuracy of release survey instrumentation. The inspectors also reviewed records of leak tests on selected sealed sources and discussed nationally tracked source transactions with licensee staff.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) documents associated with radiological hazard assessment and control. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedure PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radiation protection (RP) activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Chapter 12; Technical Specifications (TS) Section 6.12; 10 CFR Parts 19 and 20; and approved licensee procedures. Licensee programs for monitoring materials and personnel released from the RCA were evaluated against 10 CFR Part 20 and IE Circular 81-07, Control of Radioactively Contaminated Material. Documents reviewed are listed in the Attachment.

b. Findings:

No findings were identified.

2RS2 As Low As Reasonably Achievable (ALARA)

a. Inspection Scope

ALARA Program Status: The inspectors reviewed and discussed plant exposure history and current trends including the site's three-year rolling average (TYRA) collective exposure history for calendar year (CY) 2010 through CY 2012. Current and proposed activities to manage site collective exposure and trends regarding collective exposure were evaluated through review of previous TYRA collective exposure data and review of the licensee's 5-year ALARA program implementing plan. Current ALARA program guidance and recent changes, as applicable, regarding estimating and tracking exposure were discussed and evaluated.

Radiological Work Planning: The inspectors reviewed planned work activities and their collective exposure estimates for SL1-25 and the station's applications of lessons learned from work performed during SL1-24. Work activities, exposure estimates and

mitigation activities were reviewed for the following high collective exposure tasks: reactor head work, pressurizer (PZR) heater work, reactor coolant pump (RCP) motor replacement work and balance of plant scaffold management.

For the selected tasks, the inspectors reviewed dose mitigation actions and established dose goals. During the inspection, use of remote technologies including teledosimetry and remote visual monitoring were verified as specified in RWP or procedural guidance. Current collective dose data for selected tasks were compared with established estimates and, where applicable, changes to established estimates were discussed with responsible licensee ALARA planning representatives. The inspectors reviewed previous post-job reviews conducted for the SL1-24 and verified that the items were entered into the licensee's corrective action program for evaluation.

Verification of Dose Estimates and Exposure Tracking Systems: The inspectors reviewed select ALARA work packages and discussed assumptions with responsible planning personal regarding the bases for the current estimates. The licensee's on-line RWP cumulative dose data bases used to track and trend current personal and cumulative exposure data and/or to trigger additional ALARA planning activities in accordance with current procedures were reviewed and discussed. Selected work-in-progress reviews for work exceeding the dose budget for SL1-24 including modification work for the extended power uprate and adjustments to cumulative exposure estimate data were evaluated against work scope changes or unanticipated elevated dose rates.

Source Term Reduction and Control: The inspectors reviewed historical dose rate trends for shutdown chemistry, cleanup, and resultant chemistry and radiation protection trend-point data against the current SL1-25 data as well as licensee's implementation and evaluation of the results of implementation of zinc injection. Licensee programs implementing noble gas and iodine mitigation strategies to minimize exposures resulting from fuel leaks were discussed with plant staff.

Problem Identification and Resolution: The inspectors reviewed selected CAP documents associated with ALARA program implementation and discussed these with Licensee staff. The reviewed items included selected action requests (AR)s, self-assessments, and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedure PI-AA-204, Condition Identification and Screening Process and PI-AA-205, Condition Evaluation and Corrective Action.

The licensee's ALARA program activities and results were evaluated against the requirements of UFSAR Chapter 12; TS Sections 5.4 and 5.7; 10 CFR Parts 19 and 20; and approved licensee procedures. Records reviewed are listed in section 2RS2 of the Attachment.

Radiation worker performance was reviewed as part of observations conducted for IP 71124.01 and is documented in section 2RS1.

b. Findings:

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

a. Inspection Scope:

Plant Airborne Radioactivity Controls and Mitigation: The inspectors reviewed the plant's UFSAR and current SL1-25 tasks to identify potential airborne radiation areas, and associated ventilation systems and monitoring instrumentation. Selected licensee documents including TS, UFSAR, design basis documents, and procedures associated with plant airborne radioactivity controls and monitoring, and with respiratory protection program implementation were reviewed and discussed with cognizant licensee representatives.

Engineering Controls: Licensee engineering controls to control and mitigate airborne radioactivity were reviewed and discussed. The inspectors evaluated engineering controls use for radiation protection purposes, including operation of the SL1&2 Reactor Containment Building (RCB) purge and installation of temporary HEPA systems used at the Steam Generator Blowdown Treatment Facility and selected SL1-25 work activities. The evaluation included procedural guidance, operability testing, and established configurations. In addition, plant guidance and its implementation for monitoring beta-gamma and alpha-emitting radionuclides for airborne conditions were reviewed and discussed with licensee representatives.

Use of Respiratory Protection Devices: Program guidance for issuance and use of respiratory protection devices were reviewed and discussed with responsible licensee representatives. The inspectors reviewed Total Effective Dose Equivalent (TEDE)-ALARA evaluations for selected SL1-25 outage activities. Selected whole-body count (WBC) routine and investigative analysis results for occupational workers were reviewed and discussed. Use of respiratory protective equipment was evaluated for the workers involved in the SL1 V-4111 work activities and SL1 reactor cavity surveys. The inspectors toured selected onsite compressors available to supply breathing air for current outage activities and verified Grade D air certification for all staged compressors. Training, fit testing, and medical qualifications for selected HP staff, licensed operators, carpenters, and emergency duty staff involved in respiratory protection activities to include SL1-25 work associated with SL1 V-4111 and SL1 reactor cavity surveys were reviewed and verified.

Self-Contained Breathing Apparatus (SCBA) for Emergency Use: The inspectors verified current status, operability and availability of select SCBA equipment maintained within the firehouse, operations support center, Unit 1 and 2 control rooms, and reactor auxiliary building (RAB). Maintenance activities for selected respiratory protective equipment, e.g., compressed gas cylinders, regulators, valves, and hose couplings, by certified vendor technicians was verified for selected SCBA units. Training, fit testing, and medical qualifications for selected HP, maintenance, I&C, and Ops staff assigned Emergency Response Organization (ERO) duties were reviewed and verified. For

selected SL1 and SL2 control room operators, the inspectors discussed and verified annual hands-on SCBA training activities including donning, doffing and functionally checking SCBA equipment and availability of corrective lens.

Problem Identification and Resolution: The inspectors reviewed selected CAP documents within the areas of radiological airborne controls and respiratory protection activities. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Licensee CAP documents reviewed are listed in the Attachment.

Radiation protection program activities associated with airborne radioactivity monitoring and controls were evaluated against details and requirements documented in the UFSAR Chapters 11 and 12; TS Sections 3.6.1.7, Containment Ventilation System, 6.8.1 Procedures and Programs, and 6.8.4 (k), Ventilation Filter Test Program; 10 CFR Part 20; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings:

Introduction: A self-revealing Green NCV of 10 CFR Part 20.1703(a) was identified related to the licensee's use of respiratory protection equipment. Specifically, the licensee failed to use respiratory protection equipment that had been tested and certified by NIOSH to limit the intake of radioactive material as required by 10 CFR 20.1703(a).

Description: On December 27, 2011, the licensee received a shipment of powered air-purifying respirator (PAPR) hoods with a serial number different from those in inventory. The licensee questioned the vendor on the change in serial number and was informed that the new shipment of PAPR hoods were NIOSH-certified. At this point, the licensee recognized the PAPR hoods used previously had not been NIOSH-certified. For a period of approximately one year before December 27, 2011, licensee workers used non-NIOSH certified PAPR hoods in a radiologically controlled area (RCA) for activities associated with insulation removal and installation, reactor head support services, and decontamination. The hoods were used by the licensee to relieve heat stress in the RCA. The inspectors noted that the PAPR hoods had not undergone a NIOSH certified testing program to ensure their intrinsic safety. PAPR hoods can fail and potentially inhibit breathing with no powered air flow. Inhalation/exhalation issues, along with other potential safety hazards such as hearing damage from the fan motor and flammability of the device, would be evaluated as part of the NIOSH certification process. The inspectors noted that no injuries occurred as a direct result of the use of these respirators by licensee workers.

Analysis: The licensee's failure to use respiratory protection equipment that had been tested and certified by NIOSH to limit the intake of radioactive material as required by 10 CFR 20.1703(a) was a performance deficiency. The finding is more than minor because it is associated with the Occupational Radiation Safety cornerstone attribute of "Equipment and Instrumentation" and adversely affected the cornerstone objective of

protecting worker health and safety from exposure to radiation. Specifically, the use of uncertified respirators in an RCA creates the potential to put workers at an occupational health and safety risk greater (e.g. loss of air flow) than the radiological dangers that the respirator is meant to protect against. The finding was assessed using Appendix C, Occupational Radiation Safety Significance Determination Process (dated August 19, 2008) of IMC-0609, Significance Determination Process. The finding was determined to be of very low safety significance (Green) because it was not an ALARA planning issue, there was no overexposure or potential for overexposure, and the licensee's ability to assess dose was not compromised. A cross cutting aspect was not assigned because the performance characteristic was corrected and eliminated before the inspectors identified the issue and is therefore not reflective of present licensee performance.

Enforcement: 10 CFR Part 20.1703 states that, "If the licensee assigns or permits the use of respiratory protection equipment to limit the intake of radioactive material; (a) The licensee shall use only respiratory protection equipment that is tested and certified by the National Institute for Occupational Safety and Health (NIOSH) except as otherwise noted in this part, or (b) If the licensee wishes to use equipment that has not been tested or certified by NIOSH, or for which there is no schedule for testing or certification, the licensee shall submit an application to the NRC for authorized use of this equipment except as provided in this part. The application must include evidence that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use. This must be demonstrated either by licensee testing or on the basis of reliable test information." Contrary to the above, for approximately a year before December 27, 2011, the licensee used respiratory protection equipment that had neither been tested and certified by NIOSH nor received authorization from the NRC to do so. Specifically, the PAPR hoods were used in a radiologically controlled area. The licensee discontinued use of the non-NIOSH certified respiratory protection equipment as part of their immediate corrective actions and the issue was entered into the licensee's corrective action program under AR 1719479. Because the failure to comply with 10 CFR Part 20.1703 was of very low safety significance and has been entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 050000335, 389/2013005-01: Failure to Use Only NIOSH Certified Respiratory Protection Equipment.

2RS4 Occupational Dose Assessment

a. Inspection Scope:

The inspectors evaluated current RP program activities and results associated with internal and external radiation exposure monitoring of occupational workers. The review included program guidance, equipment and changes, as applicable; quality assurance activities, results, and responses to identified issues; and individual dose results for occupational workers.

External Dosimetry: The inspectors reviewed and discussed RP program guidance for monitoring external and internal radiation exposures of occupational workers. The inspectors verified National Voluntary Laboratory Accreditation Program (NVLAP) certification data and discussed program guidance for storage, processing and results for active and passive personnel dosimeters currently in use. Comparisons between direct reading dosimeter (DRD) and thermoluminescent dosimeter (TLD) data were reviewed and discussed.

Internal Dosimetry: Program guidance, instrument detection capabilities, and select results for the internally deposited radionuclides were reviewed in detail. The inspectors reviewed routine termination and follow-up *in vivo* (WBC). In addition, guidance for collection and conduct of special bioassay sampling were discussed to include an event associated with individual who fell into the SL2 SFP cask pit area.

Special Dosimetric Situations: The inspectors reviewed monitoring conducted and results for special dosimetric situations. The methodology and results of monitoring occupational workers within non-uniform external dose fields were evaluated. In addition, the adequacy of dosimetry program guidance and its implementation were reviewed for shallow dose assessments and calculations for discrete radioactive particle skin contamination events. Neutron monitoring conducted in support of ISFSI loading and transport operations during 2012 and 2013 was reviewed and discussed. There have been no declarations of pregnancy by workers during the last 3 years. However, inspectors reviewed licensee procedures for monitoring declared pregnant workers. In addition, proficiency of RP staff involved in conducting skin dose assessments, neutron monitoring, and WBC equipment operations were evaluated through direct interviews, onsite observations, and review and discussions of completed records and supporting data.

Problem Identification and Resolution: The inspectors reviewed and discussed selected CAP documents associated with occupational dose assessment. The reviewed items included ARs, self-assessment, and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve identified issues in accordance with PI-AA-204, Condition Identification and Screening Process and PI-AA-205, Condition Evaluation and Corrective Action.

RP program occupational dose assessment guidance and activities were evaluated against the requirements of the UFSAR Chapter 12; TS Sections 6.11; 10 CFR Parts 19 and 20; and approved licensee procedures. Document reviewed are listed in the Attachment.

b. Findings:

No findings were identified.

2RS5 Radiation Monitoring Instrumentation

a. Inspection Scope

Walkdowns and Observations: During tours of the RAB, turbine deck, SFP areas, control room, and RCA exit points, the inspectors observed installed radiation detection equipment including the following instrument types: area radiation monitors (ARM)s, continuous air monitors, personnel contamination monitors (PCMs) (including hand and foot monitors), small article monitors (SAMs), personnel monitors (PMs), and liquid and gaseous effluent monitors. The inspectors observed the physical location of the components, noted the material condition, noted flow measurement devices, input and output of flow to monitors, and compared sensitivity ranges with UFSAR requirements. In addition to equipment walkdowns, the inspectors observed source checks and alarm setpoint testing of various portable and fixed detection instruments, including ion chambers, a telepole, GEM-5s, ARGOS^{TM} ABs, and SAMs. Material condition of source check devices, device operation, and establishment of source check acceptance ranges were also discussed with calibration lab personnel.

Calibration and Testing: The inspectors reviewed the last two calibration records for selected ARMs, PCMs, PMs, SAMs, and containment high-range ARMs and the most recent calibration record for a whole body counter. Inspectors reviewed records of survey instrument function/source checks and observed and discussed performance of required checks with calibration lab personnel. Calibration source documentation was reviewed for the ARM high-range calibrator and the Cs-137 (J.L. Shepherd) source used for portable instrument checks. Calibration stickers on portable survey instruments were reviewed and inspections of storage areas for 'ready-to-use' equipment were completed during walkdowns. The inspectors reviewed alarm setpoint values for selected ARMs, PCMs, PMs, SAMs, and effluent monitors. The inspectors also reviewed count room QC records for germanium detectors and liquid scintillator counters.

Problem Identification and Resolution: The inspectors reviewed selected CAP documents in the area of radiological instrumentation. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with PI-AA-204, Condition Identification and Screening Process and PI-AA-205, Condition Evaluation and Corrective Action. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Operability and reliability of selected radiation detection instruments were reviewed against details documented in the following: 10 CFR Part 20; NUREG-0737, "Clarification of TMI Action Plan Requirements"; FSAR Chapters 11 and 12; TS Section 3 and applicable licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Mitigating Systems Cornerstone

a. Inspection Scope

The inspectors checked licensee submittals for the Unit 1 and Unit 2 mitigating system performance indicators (MSPIs) listed below for the period October 1, 2012, through September 30, 2013, 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 LI-AA-204-1001, NRC Performance Indicator Guideline, 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 Cornerstone

a. Inspection Scope

Occupational Radiation Safety Cornerstone: The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from September 2012 through August, 2013. For the assessment period, the inspectors reviewed ED alarm logs and selected ARs related to controls for exposure in 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 September 2012 through August 2013. 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 the Attachment.

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Review

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, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of July 2013 through December 2013, 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 CAP as specified in licensee procedures PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action.

b. Findings

No findings were identified.

.3 Annual Sample Review: Unit 1 AFW System Piping Degradation

a. Inspection Scope

The inspectors performed an in-depth review of ARs 1913564 and 1913575 associated with localized corrosion of Unit 1 AFW piping. Non-destructive examination (NDE) performed during the Unit 1 October 2013 RFO SL 1-25 determined that eight localized pipe areas that were previously degraded by corrosion did not meet the required minimum wall thickness criteria. The licensee completed a detailed finite element analysis that showed that the AFW system had remained operable with the degraded pipe. The inspectors reviewed the ARs in detail to determine the circumstances that allowed the AFW system piping to degrade to less than the design criteria. The inspectors verified the licensee's actions were in accordance with licensee procedures, PI-AA-204, Condition Reporting and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Actions.

b. Findings and Observations

The inspectors concluded that corrosion of the Unit 1 AFW system has been a longstanding equipment issue that has not been properly addressed. In December 2011, AR 1711863 documented two corrosion cells on the 1C AFW pump discharge piping that were characterized as being more advanced than just minor corrosion. The AR was screened by the operations shift manager as requiring a Mode 3 hold. The Mode 3 hold would ensure the issue was evaluated and resolved prior to restarting the unit. However, administratively, the Mode 3 hold was not put in place and the corroded pipe areas were not fully evaluated prior to restarting the unit. The failure to assign a Mode 3 hold on AR 1711863 was later documented in the CAP as AR 1931323. In September 2012, AR 1808061 was initiated documenting that the "rust spots" on the 1C AFW piping referenced in AR 1711863 appeared to be further degraded and need to be evaluated. In October 2012, two additional corrosion cells were identified on the same 1C AFW pump discharge piping (AR 1815147). In January 2013, most of the corrosion on the 1C AFW pump discharge piping was removed and engineering personnel measured the depth of the pits in the corroded areas using a pit depth gauge (micrometer). The maximum pit depth found was 0.11 inches. Subtracting 0.11 inches from a nominal wall thickness of 0.337 inches, engineering calculated a pipe wall thickness of 0.227 inches (minimum wall is 0.205 inches). The licensee did not recoat the piping to prevent additional degradation until July 2013. In August 2013, the inspectors identified corrosion on the 1C AFW pump discharge piping to 1A steam generator that had not been previously identified by the licensee (AR 1894701). During the RFO, several localized areas of the degraded AFW pipe documented above were determined to be less than the calculated minimum wall criteria. The regulatory significance of this issue is documented below.

Introduction: The inspectors identified a Green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion XVI, Corrective Action, for the licensee's failure to identify localized corrosion on the discharge piping for the 1C auxiliary feedwater pump that exceeded the licensee's acceptance criteria for minimum pipe wall thickness.

Description: In August 2013, the inspectors identified an area of localized corrosion on the 1C AFW pump discharge piping to 1A steam generator that had not been previously identified by the licensee in their CAP. In response to the inspector's observations, the licensee entered AR 1894701 into the CAP for further evaluation. Licensee procedure PI-AA-204, "Condition Identification and Screening Process," defines, in part, a condition adverse to quality (CAQ) as a deficiency or non-conformance that has the potential to affect the operability or functionality of safety related systems. PI-AA-204, section 4.2, states in part, that the CAP database shall be used to document and track CAQ.

Engineering performed an initial visual examination of the corroded area and determined that the corrosion appeared to be surface corrosion with little or no wastage of metal pipe. This determination was based on the fact that the corrosion cell appeared similar to previously identified corrosion cells that did not exceed the licensee's acceptance criteria for minimum wall thickness. A corrective action plan was initiated to inspect and recoat the pipe during the fall 2013 refueling outage (RFO). The licensee completed NDE during the RFO and identified that the localized area had a wall thickness of 0.087 inches that was less than the licensee calculated pipe minimum wall thickness acceptance criteria of 0.205 inches. The licensee's minimum wall thickness calculation used the design formulas of ASME Section III and also included the interactions of pressure stress and longitudinal bending stresses. The calculation assumes uniform wall reduction of the pipe run. Localized pipe degradation that exceeds minimum wall thickness may be shown to be acceptable with further analysis to characterize the flaw and its impact on the pipe's structural integrity.

During the RFO, ARs 1913564 and 1913575 were initiated by the licensee to address several examples of unsatisfactory NDE results for degraded unit 1 AFW system piping. The NDEs determined that eight localized pipe areas, including the one identified by the inspector, had wall thicknesses less than the licensee's calculated minimum allowed wall thickness. The inspectors reviewed the corrective action program for issues related to AFW piping corrosion and determined that the licensee had opportunities in 2011, 2012, and 2013 to address the corrosion issues. Corrective actions included replacement of several sections of degraded AFW pipe. The licensee also completed a detailed finite element analysis that showed the AFW system would have remained operable with the degraded pipe. The conclusion of the analysis, which only applies to the as-found condition of the degraded AFW piping, showed that the degraded pipe would meet ASME Code allowed minimal wall requirements. Any further degradation would require another detailed evaluation. The licensee also completed a common cause analysis of AFW system equipment issues including problems with corrosion that may result in additional corrective actions.

Analysis: The licensee's failure to identify corrosion on the 1C AFW pump discharge piping that exceeded pipe minimum wall thickness acceptance criteria in the CAP was a performance deficiency. The finding is more than minor because if left uncorrected, the performance deficiency has the potential to lead to a more significant safety concern. Specifically, unmitigated corrosion of the AFW piping would result in through-wall leaks, affect structural integrity of the piping, and ultimately result in inoperability of the system. Using Table 2 of Manual Chapter 0609.04, Significance Determination Process (SDP) Initial Characterization of Findings dated June 19, 2012; the inspectors concluded the

finding affected the mitigating systems cornerstone. The inspectors evaluated the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," Exhibit 2, dated June 19, 2012. The finding was determined to be of very low safety significance (Green) because all screening questions were answered "No." The inspectors determined the cause of this finding was associated with a cross cutting aspect of minimizing longstanding equipment issues in the resources component of the human performance area. Specifically, the licensee had not provided adequate resources to address longstanding Unit 1 AFW system corrosion issues [H.2(a)]

Enforcement: Title 10 of the Code of Federal Regulations, Part 50, Appendix B, Criterion XVI, "Corrective Action," requires, in part, that measures shall be established to assure that conditions adverse to quality such as failures, malfunctions, deficiencies, deviations, defective material and equipment, and nonconformances are promptly identified and corrected. Licensee procedure PI-AA-204, Condition Identification and Screening Process, defines, in part, a condition adverse to quality as a deficiency or non-conformance that has the potential to affect the operability or functionality of safety related systems. PI-AA-204, section 4.2, states in part, that the CAP database shall be used to document and track condition adverse to quality. Contrary to the above, prior to NRC inspector identification in August 2013, the licensee failed to identify a condition adverse to quality. Specifically, the licensee failed to identify corrosion on the 1C AFW pump discharge piping to 1A steam generator that did not meet the licensee's acceptance criteria for minimum wall thickness. Corrective actions taken included replacement of several sections of degraded AFW pipe and a detailed finite element analysis that showed the AFW system would have remained operable with the degraded pipe. Because this finding was of very low safety significance and was entered into the licensee's corrective action program as AR 1913575, this violation is being treated as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy: NCV 05000335/2013005-02, Failure to Identify and Implement Appropriate Corrective Actions for AFW System Corrosion.

4OA3 Follow-up of Events and Notice of Enforcement Discretion

Personnel Performance During Unplanned Plant Operations

.1 Unit 1 Manually Tripped Due to Digital Electric-Hydraulic Leak

a. Inspection Scope

On November 12, 2013, Unit 1 was operating at approximately 90 percent RTP when a hydraulic fluid leak developed from a fitting for the digital electrohydraulic (DEH) system associated with the turbine generator. Control room operators initiated a manual reactor trip since the continued loss of hydraulic fluid would result in an automatic turbine trip and a reactor trip.

The inspectors were notified of the reactor trip and responded to the plant to assess plant conditions, determine if any complications occurred during the trip and reactor plant shutdown. The inspectors toured the Unit 1 turbine building and observed Unit 1 control room activities following the shutdown to hot standby. The inspectors reviewed

control room chronological logs, control room indications, post trip procedures, and interviewed control room operators to verify that operating restrictions and procedural requirements were met. The inspectors observed control room operator communications, procedure place keeping, and control room annunciator responses by the reactor operators at the control boards. The inspectors reviewed documentation and operator actions associated with licensee procedures 1-EOP-01, Standard Post Trip Actions, and 1-EOP-02, Reactor Trip Recovery. On November 13, the reactor was restarted subsequent to completing DEH system repairs. The inspectors observed the synchronization of the main generator to the electrical grid and portions of the power ascension.

b. Findings

No findings were identified.

.2 Unit 2 Manually Tripped Due to Loss of Feed to B Steam Generator

a. Inspection Scope

On November 14, 2013, Unit 2 was operating at approximately 100 percent RTP when the control room operators noticed a lowering B steam generator water level. The operators initiated a manual reactor trip when the B steam generator water level reached 50 percent as indicated on the narrow range water level instruments. Further reduction of water level to 35 percent would have resulted in an automatic reactor trip.

The inspectors were notified of the reactor trip and responded to the plant to assess plant conditions, determine if any complications occurred during the trip and reactor plant shutdown. The inspector observed Unit 2 control room activities following the shutdown to hot standby. The inspector reviewed control room chronological logs, control room indications, post trip procedures, and interviewed control room operators to verify that operating restrictions and procedural requirements were met. The inspector observed control room operator communications, procedure place keeping, and control room annunciator responses by the reactor operators at the control boards. The inspector reviewed documentation and operator actions associated with licensee procedures 2-EOP-01, Standard Post Trip Actions, and 2-EOP-02, Reactor Trip Recovery. The licensee determined that moisture intrusion into a MFIV relay box caused degradation of the relays that resulted in a B steam generator MFIV closing and lowering steam generator water level. On November 16, the reactor was restarted subsequent to replacement of several relays and sealing of the MFIV relay box. The inspectors observed portions of the restart activities.

b. Findings

No findings were identified.

4OA5 Other Activities

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.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Coffey and other members of licensee management on January 9, 2014. 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.

ATTACHMENT: SUPPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
N. Bach, Chemistry Manager
M. Baughman, Training Manager
E. Belizar, Projects Manager
C. Bible, Engineering Director
D. Calabrese, Emergency Preparedness Manager
D. Cecchett, Licensing
B. Coffey, Plant General Manager
D. DeBoer, Operations Director
J. Jensen, Site Vice President
E. Katzman, Licensing Manager
C. Martin, Health Physics Manager
R. McDaniel, Fire Protection Supervisor
J. Piazza, Maintenance Director
P. Rasmus, Assistant Operations Manager
M. Snyder, Nuclear Quality Assurance Manager
C. Workman, Security Manager

NRC personnel:
D. Rich, Chief, Branch 3, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000335, 389/2013005-01	NCV	Failure to Use Only NIOSH Certified Respiratory Protection Equipment (2RS3)
05000335/2013005-02	NCV	Failure to Identify and Implement Appropriate Corrective Actions for AFW System Corrosion (4OA2.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection
OP-AA-102-1002, Seasonal Readiness

Section 1R04: Equipment Alignment
1-NOP-14.01, Component Cooling Water system Initial Alignment
1-NOP-14.02, Component Cooling Water Operation
2-NOP-03.11, High Pressure Safety Injection Initial Alignment
1-NOP-59.01A, 1A Emergency Diesel Generator Standby Alignment
2-NOP-03.11, High Pressure Safety Injection Initial Alignment
2-NOP-07.41, 2A Containment Spray Initial Alignment

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 1R08: Inservice Inspection Activities
Procedures:
Administrative Procedure, ADM-29.03, Boric Acid Corrosion Control Program, Revision 11
Inservice Surveillance Procedure, 1-ISP-01.01, Reactor Coolant System ASME Leakage Test, Revision 8
Operations Surveillance Procedure, 1-OSP-01.06, Reactor Coolant System Leak Test, Revision 3
Operations Surveillance Procedure, 1-OSP-24.01, RAB Fluid Systems Periodic Leak Test, Revision 18

Corrective Action Documents:
Action Request (AR) 01733274, Engineering Disposition of RCS leak from reactor vessel head ICI flange #8
AR 01908225-01, Engineering Disposition of an active RCS boric acid packing leak identified on V1208, Root Valve for LT-1110Y, 09/29/2013
AR 01909433-01, Engineering Disposition of RCS leak from the #8 ICI flange on the reactor head
AR 01910671-01, Engineering Disposition of boric acid residue in contact with the base of the 1B1 RCP and casing
AR 01911875-01, Engineering Disposition of Boric Acid in contact with pump studs and flange area
AR 01917447-01, Engineering Disposition of active boric acid leak at fitting of 5-way manifold valve VPDIS-02-1 for PDIS-02-1
AR 01917448-01, Engineering Disposition of active boric acid leak observed at the packing nut of Unit 1 V3811 vent valve
AR 1733785, RCS leak from reactor vessel head ICI flange #8

Other Documents:
2012 Outages (SL-1-24, SL-2-20, TP-3-26, and TP-4-27)
AES 13058421-2-1, Degradation Assessment for St. Lucie Unit 1 Steam Generators for End-of-Cycle 24 (Fall 2013 Outage), Revision 0
AES 13058422-2Q-2, Preliminary Condition Monitoring and Operational Assessment to Establish Plug Limits for St. Lucie Unit 1 Steam Generators for October 2013 Inspection
Areva Document 03-9209948, St. Lucie (PSL) Unit 1 Eddy Current Data Analysis Guidelines Fall 2013, Revision, 000 (Note: This is a proprietary document.)
Areva Document 51-9200512-000, Qualified Eddy Current Examination Techniques for St. Lucie Unit 1. Fall 2013 (Note: This is a proprietary document.)
Evaluation # PSL-ENG-SESJ-11-006, St. Lucie Unit 1 Steam Generators Degradation Assessment Update For End-of-Cycle 23 Refueling Outage, Revision 0
Examination Technique Specification Sheet (ETSS) 1 R1, EPRI ETSS Applicability per PSL-ENG-SESJ-013-004 and 51-9200512
ETSS 2 R0, EPRI ETSS Applicability per PSL-ENG-SESJ-013-004 and 51-9200512
ETSS 3 R0, EPRI ETSS Applicability per PSL-ENG-SESJ-013-004 and 51-9200512
ETSS 4 R0, EPRI ETSS Applicability per PSL-ENG-SESJ-013-004 and 51-9200512
PSL-ENG-SESJ-09-013, Condition Monitoring and Operational Assessment for the St. Lucie Plant Unit 1 Steam Generators based on Eddy Current Examination End of Cycle 21, November 2008, Revision 0
PSL-ENG-SESJ-09-070, St. Lucie Unit 1 Steam Generators Degradation Assessment Update for End-of-Cycle 22 Refueling Outage, Revision 0
PSL-ENG-SESJ-013-004, Degradation Assessment for St. Lucie Unit 1 Steam Generators for End-of-Cycle 24 (Fall 2013 Outage), Revision 0
Quick Hit Self-Assessment – AR #01858601, BOP, ISI, and FAC Quick Hit Self-Assessment for 2012 Outages (SL-1-24, SL-2-20, TP-3-26, and TP-4-27)
Summary of SL1-25 Steam Generator Exams Performed
Summary of SL1-25 Steam Generator Secondary Side Inspections
Work Order Package 40123840 01, V1208: No Follower Remaining Repack (DBA)
Work Order Package 40270733 01, U1: V1209 – DBA @ Packing; Leaking – Repack per AR 01908229
Work Order Package 40271836 01, Active B/A Bonnet Leak on V3911 1B1 SIT Recirc Drain
Work Order Package 40276407 01, U1 V3811; 1 Drop Per Minute Packing Leak – RCB NOP/NOT Item
Work Order Package 40276557 01, VPDIS-02-1 Leaking at Pressure Gauge Fitting – NOP/NOT W/D

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

2-EOP-01, Standard Post Trip Actions
2-EOP-02, Reactor Trip Recovery
2-EOP-03, Loss of Reactor Coolant
2-EOP-04, Steam Generator Tube Rupture
1-PTP-91, Initial Criticality Following Refueling
2-GOP-302, Reactor Plant Startup – Mode 3 to Mode 2

Section 1R12: Maintenance Effectiveness
ER-AA-100-2002, Maintenance Rule Program Administration
SCEG-004, Guideline for Maintenance Rule Scoping, Risk Significant Determination, and Expert Panel Activities

Section 1R13: Maintenance Risk Assessments and Emergent Work Control
OP-AA-104-1007, Online Aggregate Risk
WCG-016, Online Work Management
1-AOP-03.02, Shutdown Cooling Abnormal Operations
ADM-09.14, Reduced Inventory / Mid-Loop Controls

Section 1R15: Operability Determinations and Functionality Assessments
EN-AA-203-1001, Operability Determinations and Functionality Assessments

Section 1R19: Post Maintenance Testing
ADM-78.01, Post Maintenance Testing
1-OSP-09.02B, 1B Auxiliary Feedwater Pump Refueling Shutdown Pump and Valve Test
1-OSP-03.05, 1A High Pressure Safety Injection Pump Code Run
1-OSP-21.01B, IB Intake Cooling Water Pump Code Run
2-OSP-09.14, Main Feedwater Isolation Valves Periodic Test

Section 1R20: Refueling and Other Outage Activities
ADM-09.14, Reduced Inventory / Mid-Loop
ADM-09.23, Shutdown Safety Assessment
1-GMM-68.02, Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches
1-GMM-01.02A, Reactor Vessel Maintenance – Sequence of Operation Component Removal
1-NOP-03.05, Shutdown Cooling
1-NOP-01.03, Draining RCS
1-NOP-01.04, RCS Reduced Inventory and Mid-Loop Operation
1-PTP-81, Reload Startup Physics Testing
1-PTP-91, Initial Criticality Following Refueling
1-GOP-504, Reactor Plant Heatup – Mode 5 to Mode 4
AP-0010145, Shutdown Cooling Controls

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:
EPIP-06, “Activation and Operation of the Emergency Operations Facility,” Revisions 32, 33
EPIP-08, “Off-Site Notifications and Protective Action Recommendations,” Revisions 29, 30
Evacuation Time Estimate Study Update
Radiological Emergency Plan, Revisions 60, 61

Section 2RS1: Radiological Hazard Assessment and Exposure Controls

Procedures, Guidance Documents, and Manuals:

HP-43, Control Inventory and Leak Testing of Radioactive Sources, Revision (Rev.) Number (No.) 21
HP-47, Classification of Radioactive Waste Material for Land Disposal, Rev. No. 28C
HPP-1, Preparing Radiation Work Permits, Rev. No. 34
HPP-3, High Radiation Areas, Rev. No. 36
HPP-39, Response Protocols for Whole Body Counting and Personnel Contamination Monitoring, Rev. No. 9
HPP-41, Movement of Material and Equipment, Rev. No. 30
HPP-42, Identification, Survey and Release of Material, Rev. No. 8
HPP-70, Personnel Contamination Monitoring, Rev. No. 26
PI-AA-204, Condition Identification and Screening Process, Rev. No. 21
PI-AA-205, Condition Evaluation and Corrective Action, Rev. No. 21
RP-SL-101-1006, Access Control Using Alarming Dosimeters, Rev. No. 0
RP-SL-102-1000, Alpha Monitoring, Rev. No. 0
RP-SL-102-1001, Area Radiation and Contamination Surveys, Rev. No. 3
RP-SL-102-1003, Discrete Radioactive Particles, Rev. No. 1
RP-SL-103-1003, ISFSI Radiological Controls, Rev. No. 2
RP-SL-103-2003, Crudburst Monitoring Requirements, Rev. No. 1
RP-SL-103-2005, RP Controls of Spent Fuel Pool Non-SNM, Rev. No. 1
RP-SL-103-2006, Radiation Protection Outage Activities, Rev. No. 3
RP-SR-103-1005, Radiography Operations, Rev. No. 2

Records and Data Reviewed:

10 CFR Part 50/61 Certificate of Analysis Reports, Sample IDs: 302557007, 120-051 DAW Comp, Swipe, Dated 04/12/12; and 302557007, 120-051 DAW Comp, Swipe, Dated 06/01/12
2012 and 2013 NSTS Annual Inventory Reconciliation Letters, Dated 01/16/12 and 01/17/13, Respectively
Health Physics Procedure-4, Attachment K, U-2 High radiation Lock Check-off Sheet, Dated 09/17/13
Attachment 2, Spent Fuel Pool Non-SNM Item Inventory Log Sheets, Units 1 and 2,
RP-SL-103-2005, RP Controls of Spent Fuel Pool Non-SNM, Rev. No. 1, Dated 07/09/13 and 07/10/13, Respectively
HP-43, Control Inventory and Leak Testing of Radioactive Sources, Rev. No. 21, Form HP-43.1, Source Leak Test and Inventory Forms, Dated 08/29/13 and 09/09/13
Radiation Work Permit (RWP) No. 13-0154, FCV-3306, Troubleshoot, Repair Actuator (Remove/Replace as needed), Rev. 01
RWP No. 13-1012, Fuel Transfer Flange: Remove (Modifications: Install New Flange System Contingency), Rev. 00
RWP No. 13-0140, (Pre-Outage) V-4111 Repair/Replace, RP survey canal/upender, Decon areas/equipment as needed. All support Work, Rev. 02
RWP No. 13-0101, Radiography on Turbine Decks. Secondary Side Areas. New Components. Radiography Vault, Rev. 00
RWP No. 13-1317, Lower Cavity Decon Activities, Rev. 00
RWP No. 13-1407, PZR Heaters: Scaffold, Insulation: Install/Remove, Rev. 01
RWP No. 13-1416, PZR Heater Elements: Cut welds/Remove/Dispose/De-Burr/Swab/Install New Heaters/Tack weld, Rev. 00

RWP No. 13-1417, PZR Heaters, Weld, QC, NDE, Rev. 00
VSDS Standard Map Survey Report Survey Nos. PSL-M-20130619-23, SL1 RAB/Low Pressure Safety Injection Pumps Rooms, Dated 06/09/13; PSL-M-20130830-2, Blank/Blank Map/U1 (HPS-64 V-4111 U1 SFP Transfer Canal), Dated 08/30/13; PSL-M-20130904-15, Blank/Blank Map/U1 (HPS-64 V-4111 U1 SFP Transfer Canal), Dated 09/04/13; PSL-M-20130912-16, Blank/Blank Map/U1 (HPS-64 V-4111 U1 SFP Transfer Canal), Dated 09/12/13; PSL-M-20130193-4, HPS-42 Spent Fuel Pool, Dated 09/13/13; PSL-M-20130917-19, Site/Q.A. Building – Radiography Sources/19.5', Dated 09/17/13; PSL-M-20130917-20, U1 Turbine/Turbine Deck: Mezzanine/39.5' (Radiography), Dated 09/17/13; PSL-M-20130918-5, Blank/Blank Map/U1 (HPS-64 V-4111 U1 SFP Transfer Canal), Dated 09/18/13; PSL-M-20131001-2, U1 RCB/Upper Reactor Cavity/62', Dated 10/01/13; PSL-M-20131001-23, U1 RCB/Lower Cavity/62', Dated 10/01/13; PSL-M-20131002-20, U1 RCB/RCB Lower Level – 18' & 23'/18'/23', Dated 10/02/13; PSL-M-20130806-4, ISFSI Installation Pad, Dated 09/06/13; and PSL-M-20130903-3, ISFSI Installation Pad, Dated 09/03/13.

Corrective Action Program (CAP) Documents:
AR No. 1743391
AR No. 1745213
AR No. 1754914
AR No. 1773085
AR No. 1784272
AR No. 1793011
AR No. 1793148
AR No. 1816364
AR No. 1839071
AR No. 1857880
St. Lucie Nuclear Oversight Report, Radiation Protection and Radwaste, Report No. PSL-12-002, Dated 03/26/12
Quick Hit No. 1864681-02, NRC RP Occupational Baseline Inspection, Dated 08/13/13

Section 2RS2: ALARA

Procedures, Guidance Documents, and Manuals:
RP-SL-103-1003, ISFSI Radiological Controls, Rev. 2
RP-SL-104-2008, Portable Shielding, Rev. 2
RP-SL-103-2003, Crud-burst Monitoring Requirements, Rev. 1
RPAA-104, ALARA Program, Rev. 1
RPAA-104-1000, ALARA Implementing Procedure, Rev. 4
RPAA-104-2003, Five Year ALARA Plan Template, Rev. 1

Records and Data:
Outage Review Board Meeting for the Week of September 16-20, 2013
SL1-25 Temporary Shield Package List, Rev. 0
SL1&2 Reactor Containment Building Source Term Data Point Trends, 1999 – Current
ALARA 5-Year Dose Reduction Action Plan, Updated July 2013
ALARA 5-Year Dose Reduction Action Item Status, Updated July 2013
2013 Proposed Online/Outage Dose Goal, Dec 2012
ALARA Review Board Meetings for 07/23/13, 08/02/13, and 08/26/13
SL1-24 Refueling Outage ALARA Report, 05/15/12

SL2-20 Refueling Outage ALARA Report, 01/17/13
SL1-25 and SL1-24 RCS Crud Burst and Cleanup Graphs, Most Recent
SL1-25, Radiation Protection Plan (RPP), Pressurizer Heater Replacement, Rev. 0
SL1-25, RPP, 1A1 RCP Motor and Pump Project, Rev. 0
SL1-24, RPP, Containment Scaffold Activities, Rev. 0
SL1&2, RPP, ISFSI Dry Fuel Loading Campaign 2013, Rev. 1
RWP No. 13-1006, Reactor Head Work, Rev. 0
RWP No. 13-1030, Scaffold Install/Remove, Rev. 0
RWP No. 13-1302, RP Activities in Reactor Containment Building, Rev. 0
RWP No. 13-1417, Pressurizer Heater Install, Rev. 0
RWP No. 13-1424, '1A1' RCP Rotating Assembly Remove/Replace, Rev. 0
Completed ALARA Packages Including Job In-Progress Reviews for RWP 11-1302-02, RP Activities Reactor Containment Building, RWP 11-1030-02, Scaffold Install/Remove, RWP 11-1416, Pressurizer Heater Work, RWP 11-1425, '1B1' RCP Motor Work, RWP 11-1426, '1B1' RCP Support Work

Corrective Action Program (CAP) Documents:
AR1629068
AR1738246
AR1870704
AR1784732
AR1794799
Reduction in Collective Radiation Exposure Effectiveness Review, AR Report 01677010

Section 2RS3: In-Plant Airborne Radioactivity Control and Mitigation

Procedures, Guidance Documents, and Manuals
HPP-36, Vacuum Cleaner Controls inside the Radiation Controlled Area, Rev. 10
HPP-37, Portable High Efficiency Particulate Air (HEPA) Filtration Ventilation Systems in the Radiation Controlled Area, Rev. 9
HPP-60, Respiratory Protection Manual, Rev. 9
HPP-61, Use of Respiratory Protective Equipment, Rev. 20
HPP-66, Operation of the SCBA Fill Station, Rev. 0
RP-SL-102-2000, Air Sampling, Rev. 2
RP-SL-103-2006, Radiation Protection Outage Activities, Rev. 5
RP-SL-106-1001, Set-up and Inspection of Breathing Air Systems, Rev. 3

Records and Data:
Airflow Capacity and/or Distribution Reports: 1 HVE-8 A, 08/08/10, 1 HVE-8 B, 08/08/10, 2 HVE-8 A, 02/21/11, 2 HVE-8 B, 02/21/11, 1 HVE-8 B, 11/28/11, 2 HVE-8 A, 10/24/12, 2 HVE-8 B, 10/24/12
Monthly/Semi-Annual Respirator Inventory, July and August 2013
PSL-HEPA-013, Unitech Services Group DOP Test Results, 07/24/13
PSL-VAC-053, Unitech Services Group DOP Test Results, 07/24/13
Particulate Filter In-Place Leak Test Reports: 1 HVE-8 B, 04/08/10, 2 HVE-8A, 02/21/11, 1 HVE-8 B, 11/28/11, 2 HVE-8, 10/20/12
Quarterly/Semi-Annual SCBA/Cylinder Inspection and Inventory June and July 2013
Scott PosiChek3 Visual/Functional Test Results, Scott Air-Pak 2.2 SCBA #4, 08/13/10 and 08/22/12

Scott PosiChek3 Visual/Functional Test Results, Scott Air-Pak 2.2 SCBA #18, 08/23/12
Scott PosiChek3 Visual/Functional Test Results, Scott Air-Pak 2.2 SCBA #24, 08/23/12
Scott PosiChek3 Visual/Functional Test Results, Scott Air-Pak 2.2 SCBA #38, 08/13/10 and 08/22/12
TRI Air Testing, Inc., Laboratory Report, Compress Air/Gas Quality Testing results: Firehouse, 01/02/13, Paint House Electric, 01/02/13, Plant Air System, 01/02/13, V-1 Plant Air, 01/02/13, U2 RAB Valve 18518, 04/03/13, U1 RAB Valve 18515, 04/03/13, Firehouse, 04/03/13, Williams Paint Shop, 04/03/13, F5 Backup Pad, 04/03/13, F5 Backup Pad, 06/06/13, U2 RAB Valve SH18517, 07/02/13, U1 RAB Valve SH18515, 07/02/13, Paint Shop, 07/02/13, Firehouse, 07/02/13
Visual Inspection of Filter Systems: 1 HVE-8, 04/08/10, 2 HVE-8, 02/21/11, 1 HVE-8, 11/28/11, 2 HVE-8, 07/19/12

CAP Documents:
AR 1628882
AR 1793148
AR 1805860
AR 1684123
AR 1719479
AR 1782665
AR 1851236
NextEra Energy Nuclear Oversight Audit Checklist, 1st Quarter 2012, Radiation Protection and Radwaste, 12/12/11
PSL-12-002, St. Lucie Nuclear Oversight Report, Radiation Protection and Radwaste, 03/26/12

Section 2RS4: Occupational Dose

Procedures, Guidance Documents, and Manuals
HPP-30, Personnel Monitoring, Rev. 52
HPP-70, Personnel Contamination Monitoring, Rev. No. 26
HP-112, Multibadging, Rev. 30
HP-116, Electronic Personnel Dosimeter Program, Rev. 23
RP-AA-101, Personnel Monitoring Program, Rev. No. 0
RP-AA-101-1001, Personnel Monitoring Device Issue, Rev. No. 0
RP-AA-101-2004, Method for Monitoring and Assigning Effective Dose Equivalent (EDE) for High Dose Gradient Work, Rev. 3
RP-SL-101-1006, Access Control Using Alarming Dosimeters, Rev. No. 0
RP-SL-105-1001, Operation of the Whole Body Counting System, Rev. No. 2

Records and Data:
Letter to File, Tritium Dose Calculation, Dated 02/15/13
NVLAP Certificate of Accreditation and Scope of Accreditation, 1005550-0, Mirion Technologies (GDS), Inc., 2013-07-01 through 2014-06-30
SL2-20 Reactor Cavity Airborne Incident - Internal Dose Assessments, Dated 09/04/12
Personnel Contamination Event (PCE) Log, Dated from Mar 2011 to Present

CAP Documents:
AR 1631064
AR 1801700
AR 1803756
AR 1805860
AR 1687249
AR 1788366
AR 1792534
AR 1804344
AR 1846346
NVLAP Onsite Assessment Report, 100555-0, Mirion Technologies (GDS), Inc., Ionizing Radiation Dosimetry, 02/29/12
PSL-12-002, St. Lucie Nuclear Oversight Report, Radiation Protection and Radwaste, 03/26/12

Section 2RS5: Radiation Monitoring Instrumentation

Procedures:
071141 Systems Training Reactor Control Operator Training Program lesson text, Unit 2 Radiation Monitoring, Rev. 11
1-PMI-26.01, Preventative Maintenance Procedure, Area Radiation Monitor Calibration, Rev. 3
HP-13C, Calibration of Portable Dose Rate Survey Instruments, Rev. 27
HP-13A, Operation of Portable Survey Instruments, Rev. 30
HP-13b, Calibration of Portable Count Rate Instruments, Rev. 20
RP-SL-105-4902, Calibration and Operational Check of the Canberra ARGOS-5AB Personnel Contamination Monitors, Rev. 2
RP-SL-105-3007, Operation and Calibration of the GEM-5 Exit Monitor, Rev. 1
HPP-02, Calibration and Operation of the Small and Large Article Monitors, Rev. 14
RP-SL-105-1001, Operation of Whole Body Counting System, Rev. 2
CY-SL-108-0004, Guidelines for Collecting Post-Accident Samples, Rev. 1

Data and Records:
HPP-02.5, SAM-12 Calibration Form, S/N 149, Performed 05/30/13
HPP-02.5, SAM-12 Calibration Form, S/N 149, Performed 12/27/12
HPP-02.5, SAM-12 Calibration Form, S/N 413, Performed 05/29/13
HPP-02.5, SAM-12 Calibration Form, S/N 413, Performed 12/09/12
RP-SL-105-4902-F01, ARGOS-5AB Calibration Data Sheet, S/N 179, Cal Date 08/01/13
RP-SL-105-4902-F01, ARGOS-5AB Calibration Data Sheet, S/N 310, Cal Date 07/18/13
RP-SL-105-4902-F01, ARGOS-5AB Calibration Data Sheet, S/N 310, Cal Date 11/23/11
RP-SL-105-3007-F01, GEM-5 Calibration Data Sheet, S/N 164, Cal Date 07/18/13
HPP-10.2, HPGe GAMMA Vision Calibration Form, DET 1 #46-P41570A, 01/17/12
HPP-10.2, HPGe GAMMA Vision Calibration Form, DET 1 #46-P41570A, 11/7/09
Work Order Package-Calibrations:
40057797 01, TS/CNTMT HI Range Rad Mon RIM-26-41, PMT Completed 10/09/12
38027133 01, HI Range Rad RIS-26-58/59 Cal Tech Spec 4.3.3.1.1, Completed 04/14/10
40148468 01, U1 RE-26-58; RP-2C Readout Module Failed, Completed 03/06/12
40049918 01, TS/FYP8085 RIS-26-58/59 HI Range Rad Mo, Completed 03/06/12
39013940 01, Radiation Monitor for Containment High Range Radiation, Completed 02/20/11
40077884 01, TS/CNTMT HI Range RIM-26-40 REC ID726, Completed 10/08/12
39013941 01, Radiation Monitor for Containment High Range Radiation, Completed 02/06/11

40006909 01, TS/PM2 090C/Plant Vent Stack, Completed 11/18/10
40020767 01, TS/PM2C 095C/Plant Vent Gas (WRGM) RIM-26-90 Cal, Completed 07/30/11
40081430 01, PM2-090D PLT VNT ST(SB) PIG Cal Tech Spec 4.3.3.1, Completed 4/27/12
40087990 01, TS/PM2 090C/Plant Vent Stack (SA) PIG U2, Completed 08/21/12
40111683 01, Radiation Detector for Liquid Monitor Channel 43, Completed 09/07/12
40020242 01, Radiation Detector for Liquid Monitor Channel 43, Completed 03/15/11
Daily Chemistry QC Efficiency response for Count room Scintillator, C-14 & H-3, 09/04-10/03/13
System Health Report SL1 & 2, 07/01-09/30/13, 04/01-06/30/13
Air Sampler Calibration Forms, Instrument: Air Sampler, Models: H809 V-1, S/N: 6812, Dated 07/12/12 and 08/30/13; and RAS-1, S/N 621, Dated 01/04/13 and 07/12/13
Form HP-13F-AMS-4, AMS-4 Calibration Record, HP-13F, Calibration and Operation of the Eberline Model AMS-4 Air Monitoring System, St. Lucie Plant, Rev. No. 11, AMS-4 S/N 1625, Dated 03/09/13 and 08/23/13
Instrument Calibration Data Sheets, Instruments:
Count Rate Instrument, Model:L-177, S/N: 245637, Dated 03/07/12 and 05/31/13;
Eberline, Model: ASP-2e, S/N: 157, Dated 08/09/12 and 04/25/13;
Ion Chamber, Model: RO-20, S/N: 4344, Dated 07/22/12 and 08/21/13; & SN 5526, Dated 07/20/12 and 06/14/13;
MGP Area Monitor Probe (AMP), Model: AMP-100, S/N 5005-009, Dated 02/05/13 and 07/26/13

Corrective Action Program (CAP) Documents:
AR 1887407
AR 1606599
AR 1798687
AR 1896464
AR 1788265

Section 4OA1: Performance Indicator Verification
Procedures, Guidance Documents and Manuals:
LI-AA-204-1001, NRC Performance Indicator Guideline, Rev. 3

Records and Data Reviewed:
SPI Verification Report (Occupational and Public Cornerstones) Mar 2012 – Aug 2013
Gaseous Waste Release Permit G-13-351-B
PSL 1&2 St Lucie Annual Radioactive Effluent Release Report 2012
Excel Spreadsheet of ED Dose/Dose Rate Alarm Logs 2012 and 2013

Section 4OA3: Follow-up of Events and Notice of Enforcement Discretion
OP-0030119, Post Trip Review
1-EOP-01, Standard Post Trip Actions
1-EOP-02, Reactor Trip Recovery
AR 1766355, Root Cause Evaluation, Unit 2 Trip due to Erratic Main Feedwater Regulating Valve Behavior
ADM-07.04, Corrective Action Program Requirements
EN-AA-203-1001, Operability Determinations/Functionality Assessments
PI-AA-204, Condition Identifying and Screening Process
PI-AA-205, Condition Evaluation and Corrective Action