



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

April 30, 2014

EA-14-047

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
05000335/2014002 AND 05000389/2014002 AND EXERCISE OF
ENFORCEMENT DISCRETION**

Dear Mr. Nazar:

On March 31, 2014, 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 April 10, 2014, with Mr. Jensen and other members of your staff.

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

In addition, contrary to Technical Specification (TS) 3.7.1.2, "Auxiliary Feedwater System," requirements, Unit 1 operated with the 1C auxiliary feedwater (AFW) pump inoperable for longer than the TS allowed completion time due to a failed auxiliary contact for the trip and throttle valve. Although a violation of TS occurred, the violation was not attributable to an equipment failure that was avoidable by reasonable licensee quality assurance measures or management controls. Therefore, the TS 3.7.1.2 violation was not associated with a licensee performance deficiency. The NRC concluded that the violation was of very low safety significance due to the short amount of time that the 1C AFW pump was inoperable. Based on these facts, I have been authorized, after consultation with the Director, Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section 2.2.4.d of the Enforcement Policy and refrain from issuing enforcement for the violation. This violation will not be considered in the assessment process or the NRC's Action Matrix.

If you contest the violation or significance of the NCV, 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 Power Plant.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC Resident Inspector at the St. Lucie Plant.

Additionally, as we informed you in the most recent NRC integrated inspection report, cross-cutting aspects identified in the last six months of 2013 using the previous terminology were being converted in accordance with the cross-reference in Inspection Manual Chapter 0310. Section 4OA5 of the enclosed report documents the conversion of these cross-cutting aspects which will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the 2014 mid-cycle assessment review. If you disagree with the cross-cutting aspect assigned, 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.

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,

/William Jones RA for/

Richard P. Croteau, Director
Division of Reactor Projects

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

Enclosure: Inspection Report 05000335/2014002, 05000389/2014002
w/Attachment: Supplemental Information

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-335, 50-389

License Nos: DPR-67, NPF-16

Report Nos: 05000335/2014002, 05000389/2014002

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

Facility: St. Lucie Plant, Units 1 & 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: January 1, 2014 to March 31, 2014

Inspectors: T. Morrissey, Senior Resident Inspector
J. Reyes, Resident Inspector
W. Loo, Senior Health Physicist (Sections 2RS1, 6-7 and 4OA1.2)
W. Pursley, Health Physicist (Sections 2RS6-7 and 4OA1.2)
J. Rivera, Health Physicist (Section 2RS8)

Approved by: D. Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2014002, 05000389/2014002; 01/01/2014 – 03/31/2014; St. Lucie Nuclear Plant, Units 1 & 2; Follow-up of Events and Notice of Enforcement Discretion; Radiological Hazard Assessment and Exposure Controls

The report covered a three-month period of inspection by the resident inspectors and regional inspectors. The significance of inspection findings are indicated by their color (i.e., 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, "Aspects Within the Cross-Cutting Areas," dated December 19, 2013. 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 5.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green: A self-revealing finding was identified for the licensee's failure to provide adequate work instructions. The maintenance work instructions for a debris filter system (DFS) backwash valve motor operator did not contain adequate details to ensure the motor operator was installed correctly. The incorrectly installed motor operator prevented the DFS from mitigating an influx of algae into the circulating water system and ultimately resulted in the need for operators to manually trip the reactor. The licensee entered this issue into the corrective action program (CAP) as action requests (ARs) 1878615 and 1911638. Corrective actions included properly installing the DFS backwash valve motor operator.

The performance deficiency was more than minor because it was associated with the equipment reliability attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the 1A2 DFS backwash valve was installed incorrectly in August 2012. This degraded the component's ability to mitigate an algae intrusion event on May 31, 2013, and resulted in a manual reactor trip. The finding was determined to be of very low safety significance (Green) based on Exhibit 1, Initiating Events Screening Questions, found in Inspection Manual Chapter 0609, Significance Determination Process, Appendix A, SDP for Findings At-Power (June 19, 2012). This was due to the fact that the finding did not cause a loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition. The cause of this finding was associated with a cross-cutting aspect of providing complete and accurate documentation in the documentation component of the human performance area. Specifically, the licensee did not provide work instructions with enough detail to properly reinstall the 1A2 backwash valve motor operator (H.7). (Section 4OA3.2)

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Cornerstone: Occupational Radiation Safety

- Green: A self-revealing non-cited violation (NCV) of 10 CFR 20.1501(a) and Technical Specification (TS) 6.12.1 was identified for failure to perform radiological surveys to ensure that the potential radiological hazards and extent of radiation levels were evaluated for an equipment transfer box being removed from the Unit 2 upper reactor cavity. This failure resulted in dose rates greater than 100 millirem per hour (mrem/hr) at 30 centimeters (cm) from a high efficiency particulate air (HEPA) vacuum cleaner, and was discovered by two workers who received electronic dosimeter (ED) dose rate alarms of 108 and 84 mrem/hr when working near the HEPA vacuum cleaner. Dose rates of the HEPA vacuum cleaner were found to be 850 mrem/hr at 30 cm. Upon identification, the licensee posted and controlled access to the equipment transfer box and placed the HEPA vacuum cleaner into a shielded container. This condition has been placed into the licensee's CAP under ARs 01946341 and 01946351.

The finding was determined to be more than minor because it is associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone, and adversely affected the cornerstone objective of ensuring adequate protection of worker health and safety from exposure to radiation, in that the workers were unnecessarily exposed to high radiation area conditions. The finding was evaluated in accordance with Inspection Manual Chapter (IMC) 0609, Appendix C (August 19, 2008), and was determined to be Green because it did not involve as low as reasonably achievable (ALARA) planning or work controls, was not an overexposure, did not present a substantial potential for an overexposure, and the ability to assess dose was not compromised. The inspectors determined that this issue had a field presence cross-cutting aspect in the human performance area (H.2) because supervisors did not oversee work activities by observing and reinforcing standards and expectations. (Section 2RS1)

REPORT DETAILS

Summary of Plant Status

Unit 1 operated at 100 percent rated thermal power (RTP) throughout the inspection period.

Unit 2 began the inspection period at 100 percent RTP. On January 9, power was lowered to approximately 93 percent RTP due to problems with the main generator isophase duct cooling system. On January 11, power was restored to 100 percent. On March 2, control room operators commenced a planned power reduction and manually tripped the reactor at 25 percent RTP to start the refueling outage. The unit was refueled and was in Mode 5 (<200 °F) at the end of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

.1 Impending Adverse Weather Conditions

a. Inspection Scope

On January 6, the inspectors reviewed the licensee's overall preparations and actions for an overnight weather forecast of below 50-degree temperatures, as described in operating procedure 0-NOP-99.06, Cold Weather Preparations. The inspectors verified conditions were established for the onset of the low temperatures including the placement of temporary heaters around equipment affected by low temperatures. The inspectors reviewed compensatory measures planned and implemented for the forecasted low temperatures while considering equipment controls, area accessibility, and system susceptibilities to cold weather. The inspectors reviewed action requests (ARs) to verify weather related issues were placed in the licensee's corrective action program (CAP). Documents reviewed are listed in the Attachment. The inspectors performed a walkdown of the following areas:

- Unit 1 and 2; A and B emergency diesel generator (EDG) engine rooms
- Unit 1 and 2; A, B, and C auxiliary feed water (AFW) pump areas
- Unit 1 and 2; Main steam isolation valve (MSIV) and main feedwater isolation valve (MFIV) areas

b. Findings

No findings were identified.

Enclosure

.2 January 9 Severe Rain Event

a. Inspection Scope

On January 9, the inspectors reviewed the licensee's action in response to a stalled weather front at the site that resulted in excess of 7 inches of rainfall over a 24-hour period. A majority of the rain fell over an approximate 4-hour span. The inspectors performed a walk down of the protected area as well as both units' auxiliary buildings to verify the precipitation and resulting runoff did not affect safety related equipment. The inspectors verified that weather related issues were placed in the licensee's CAP. Documents reviewed are listed in the Attachment. Additional details related to inspections that were performed on January 9 are documented in Section 4OA3 of this report.

b. Findings

No findings were identified.

1R04 Equipment Alignment

Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted four partial alignment verifications of the safety-related systems listed below. These verifications included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers and that those issues were documented in the CAP. Documents reviewed are listed in the Attachment.

- 2A EDG, 2A EDG fuel oil storage tank and transfer pump systems while the 2B EDG was out of service (OOS) for testing
- 2B and 2C AFW trains while the 2A AFW pump was OOS for planned maintenance
- 1B high pressure safety injection (HPSI) and 1B low pressure safety injection (LPSI) and 1B containment spray pump systems while the 1A EDG was OOS for maintenance
- 2B and 2C component cooling water (CCW) trains while the 2A CCW pump and 2A CCW heat exchanger were OOS for maintenance

b. Findings

No findings were identified.

Enclosure

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors toured the following six 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 1, Heating ventilation and air condition area behind the control room
- Unit 1, 1B EDG area
- Unit 2, Spent fuel pool floor and surrounding area
- Unit 2, 4160V switchgear room
- Unit 1, A and B Boric acid storage tanks and pumps
- Unit 2 Reactor containment building (RCB)

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Underground Manhole Inspections (3 samples)

a. Inspection Scope

The inspectors performed inspections of Unit 1 manholes M236, M237 and M265 containing safety-related cables as shown on licensee drawing 2998-G-486, Electrical Manhole and Handhole Drainage System. The inspectors verified cables were not submerged in water, cable support structures were not damaged, splices (if present) appeared intact, and adequate drainage was provided. The inspectors interviewed the responsible licensee personnel performing manhole inspections to determine whether they were knowledgeable of the work order (WO) 40240697 inspection requirements.

b. Findings

No findings were identified.

.2 Internal Flooding

a. Inspection Scope

The inspectors conducted walkdowns of the following areas which included checks of building structure drainage sumps to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed 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 (SSC). The inspectors also reviewed plant procedures that discussed the protection of areas containing safety-related equipment that may be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, control of debris, and operability of sump pump systems.

- Unit 1 emergency core cooling system (ECCS) rooms
- Unit 1 charging pump rooms

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors interviewed engineering personnel responsible for Unit 2, 2A and 2B intake cooling water (ICW) heat exchanger's monitoring and performance. The inspectors observed and assessed the end-of-cycle as-found heat exchanger conditions on the inlet and outlet seawater side of the Unit 2A ICW heat exchanger when it was initially opened for inspection. The inspectors reviewed the as-found inspection results and engineering documentation of the 2B ICW heat exchanger. The inspectors verified that the licensee completed plugging of any heat exchanger tubes deemed necessary as a result of the eddy current testing. 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 their safety-related functions by assessing documentation of licensee inspections. The inspectors walked down portions of the systems 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 the inspection procedure.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On February 5, 2014, the inspectors observed and assessed a licensed operator crew during three separate short evaluated simulator scenarios during continuing training on the control room simulator. The simulated scenarios included a steam generator tube leak; small break loss of coolant accident; and two dropped control rods, manual reactor trip and a loss of offsite power. Each scenario included an Emergency Alert classification and notification to the State. Documents reviewed are listed in the Attachment. The inspectors also reviewed simulator physical 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 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. Documents reviewed are listed in the Attachment. Additional details related to inspections that were performed on January 9 are documented in section 4OA3 of this report. The inspectors observed activities in the control room during the following three evolutions:

- January 9, Unit 1 entry into abnormal procedures for high sodium chemistry on the secondary plant, electrical grounds and auxiliary building water intrusion due to a significant rain storm
- January 9, Unit 2 rapid down power to 93 percent RTP due to loss of one iso-phase duct cooling fan and intermittent operation of the other fan
- March 2, Unit 2 planned reactor power reduction and a manual reactor trip from 25 RTP to start the planned refueling outage

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.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the performance data and associated ARs for the four systems or equipment issues 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 1936612, ECCS drain valves maintenance rule function is inadequate
- AR 1912008, Unit 1 chemical and volume control system failures (MR a(1) due to several equipment problems)
- AR 1920696, Unit 2 main feedwater system entered into a(1) monitoring (due to water intrusion in the HCV-09-2A relay box)
- AR 1932702, Unit 1 AFW system (MR a(1) due to MR functional failures of several AFW valves)

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b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Controla. 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 six 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 OOS risk-significant systems, structures, and components (SSCs) listed below. Documents reviewed are listed in the Attachment.

- Unit 1, On-line risk assessment with 1B 125V DC battery OOS during the bypassing of one degraded battery cell, 1B charging pump unavailable due to planned maintenance, and 1B ICW pump OOS due to planned maintenance
- Unit 2, On-line risk assessment with both B train HPSI injection valves OOS for planned actuator maintenance (Yellow Risk) and separately 2B LPSI and containment spray (CS) pumps OOS for planned valve maintenance
- Unit 1, On-line risk assessment with 1C AFW pump OOS for planned maintenance and separately retrieval of foreign material from the 1A EDG storage tank
- Unit 1, On-line risk assessment with A EDG and B charging pump OOS
- Unit 2, On-line risk assessment with A EDG and A CCW system OOS
- Unit 2, Mode 6, shutdown safety assessment (SSA) with the reactor coolant system (RCS) at atmospheric pressure, a containment closure crew established, and 2B EDG and CCW trains OOS for planned maintenance

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessmentsa. Inspection Scope

The inspectors reviewed the following six ARs' 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

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increase in risk. The inspectors reviewed the applicable UFSAR, and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- AR 1936174, Unit 2 ECCS room water tight door gasket damaged
- AR 1939923, Loss of sounding tape in Unit 1A EDG diesel oil storage tank
- AR 1929744, Swap resistive temperature device (RTD) for Unit 2 low temperature overpressure protection (LTOP) Operability
- AR 1946840, Unit 2 Start-up NI channel 1 operability required for defueling
- AR 1938685, 1B charging pump discharge check valve leakage
- ARs 1951480, 1951584, 2B EDG failed to synchronize to the electrical bus

b. Findings

No findings were identified.

1R18 Plant Modifications

.1 Temporary Modification: Jumper out (Bypass) Degraded 1B Battery Cell

a. Inspection Scope

The inspectors reviewed the modification associated with the installation of a jumper to bypass degraded battery cell 58 from the unit 1 1B 125V ES battery train. The inspectors reviewed licensee calculation PSL-1FSE-09-002, Unit 1 Minimum Cells Removed for 125V Class 1E Batteries, to verify the removal of battery cell 58 would not impact the operability of the battery. The inspectors observed the jumper installation and verified the installation was installed in accordance with WO 38004767 and maintenance procedure 0-CME-50.21, Safety Related/Balance of Plant (BOP) Station Battery Cell Charging and Replacement. The inspectors reviewed associated plant drawings and UFSAR documents impacted by this modification 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.

.2 Temporary Modification: Unit 2 EDGs Radiator Exhaust Wind Mitigation

a. Inspection Scope

The inspectors reviewed the engineering change (EC) documentation for the temporary plant modification EC 28069, Emergency Diesel Generator Building Air Exhaust Wind Barrier. The modification consisted of scaffolding with an installed vertical wind barrier that will shield the unit 2 EDG radiator exhaust east and west openings from high winds.

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The modification was designed to withstand winds up to 75 mph. The modification was in response to an industry issue identified that questioned whether high winds could prevent adequate air flow through the radiators of air-cooled EDGs. The licensee determined that the Unit 2 EDGs were susceptible to this phenomenon for wind speeds greater than approximately 47 mph from certain directions. The temporary modification will be replaced by a permanent modification prior to hurricane season. The Unit 1 EDGs were determined to not be susceptible to the above condition since the Unit 1 EDG radiator exhausts exit vertically through the top of the EDG building. The inspectors reviewed associated plant drawings and UFSAR documents impacted by this modification 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 five 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 40046034, 1A EDG 12 year PM outage
- WO 40295501, 1C AFW pump electronic overspeed coil replacement
- WO 40092458, Replace K1 exciter circuit relay on 2B EDG
- WO 40068463, Replace 2B containment spray pump motor
- WO 40267675, 1B Charging Pump discharge check valve replacement

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

Unit 2 Refueling Outage SL2-21

a. Inspection Scope

Outage Planning, Control and Risk Assessment

The Unit 2 planned refueling outage started on March 3, 2014. The inspectors reviewed the licensee's outage risk control plan and verified that the licensee had appropriately considered risk, industry experience and previous site specific problems. The inspectors also reviewed the outage work schedule for Operations, Maintenance, and the Fire Brigade to confirm the licensee has scheduled covered workers such that the minimum days off for individuals working on outage activities was in compliance with 10 CFR 26.205(d)(4) and (5).

During daily outage planning activities by the licensee, the inspectors reviewed the risk reduction methodology employed by the licensee during various refueling outage (RFO) SL2-21 meetings including the outage command center (OCC) morning meetings, operations daily team meetings, and schedule performance update meetings. The inspectors examined the licensee implementation of shutdown safety assessments during SL2-21 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 monitored RCS cooldown rates to verify they met TS requirements. The inspectors walked down the RCB shortly after the unit was shut down to determine whether any components were impacted by previously unidentified RCS leakage. The RCB, including the RCB sump, was inspected for any damage incurred during the operating cycle.

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

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- 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 workers fatigue was properly managed.

Refueling Activities and Containment Closure

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

Mode Transition

The inspectors examined selected TS, license conditions, license commitments and verified administrative prerequisites were being met prior to mode changes.

Reduced Inventory and Mid-Loop Conditions

The inspectors reviewed the planned activities associated with a period of reduced inventory and mid-loop conditions established in order to remove the steam generator nozzle dams after the reactor was refueled. The inspectors verified the licensee had controls in place to govern mid-loop operation and appropriate mid-loop operation training was complete. The inspectors verified the necessary instrumentation and means of adding inventory to the RCS were available.

Corrective Action Program

The inspectors reviewed ARs generated during SL2-21 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.

1R22 Surveillance Testinga. Inspection Scope

The inspectors either reviewed or witnessed the following ten surveillance tests to verify that the tests met TS, the UFSAR, the licensee's procedural requirements, and demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to 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:

- 1-OSP-07.04A, 1A Containment Spray Pump Code Run

Surveillance Tests:

- 1-OSP-59.01B, 1B Emergency Diesel Generator Monthly Surveillance (Fast Start)
- 1-OSP-09.01C, 1C Auxiliary Feedwater Pump Code Run (Monthly Operability Run)
- 0-NOP-99.02, Watch Station General Inspection Guidelines, Unit 2 Senior Nuclear Operator Rounds
- 0-OSP-37.01, Emergency Cooling Water Canal - Periodic Test
- 2-OSP-69.14B, ESF-18 Month Surveillance For EDG Start On SIAS Without LOOP and 24-Hour Run, Train B
- 2-OSP-59.11, Simultaneous Start of 2A Emergency Diesel Generator and 2B Emergency Diesel Generator Periodic Test
- 0-SME-50.08, Safety Battery Service Test (2B battery)
- 2-OSP-69.13B, ESF-18 Month Surveillance For SIAS/CIS/CSAS – Train B

Containment Isolation Valve Leak Test:

- 2-OSP-68.02, Local Leak Rate Test, Penetration #31

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness (EP)

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1EP6 Drill Evaluation

Emergency Preparedness Drills

a. Inspection Scope

On February 5, the inspector observed and assessed one licensed operator crew's performance during an evaluated licensed operator continued training scenario using the control room simulator. The simulated scenario included assessing classification of the emergency events and completing notifications to the State and the NRC. The inspectors assessed the licensee's actions to verify that emergency classifications and notifications were timely and made in accordance with the licensee emergency plan implementing procedures and 10 CFR 50.72 requirements. This completes one sample of drill observations.

b. Findings

No findings were identified.

2. RADIATION SAFETY (RS)

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

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), locked HRAs, and Very HRAs (VHRAs) in the radiologically controlled area (RCA) of the Unit 2 (U2) containment, Unit 1 (U1) and U2 auxiliary buildings, Independent Spent Fuel Storage Installation 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 associated with U2 Refueling Outage 21 (SL2-21) and the ISFSI. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection. For selected SL2-21 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 upper guide structure installation, reactor head set, and U2 'A' and 'B' steam generator (S/G) feedwater ring repairs.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected U1 and U2 LHRA and VHRA locations to include U2 containment. Changes to procedural guidance for LHRA and VHRA controls were

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discussed with health physics (HP) supervisors. Controls and their implementation for storage of irradiated material within the spent fuel pool were reviewed and discussed. Established radiological controls (including airborne controls) were evaluated for selected SL2-21 tasks to include welding on upper cavity ladder, S/G manway bowl closeout, and U2 'A' and 'B' S/G feedwater ring repairs. 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 RWP and HP technician proficiency in providing job coverage were evaluated through direct observations and interviews with cognizant licensee staff. ED alarm set points and worker stay times were evaluated against area radiation survey results for selected SL2-21 work activities. ED alarm logs were reviewed and worker response to dose and dose rate alarms during selected SL2-21 work activities were evaluated. HPT coverage and actions at the U2 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, personnel contamination monitors, and portal monitor 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 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 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, Revision (Rev.) 22 and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 23.

Radiation protection activities were evaluated against the requirements of UFSAR Chapter 12; 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:

Introduction: A self-revealing Green NCV of 10 CFR 20.1501(a) and TS 6.12.1 was identified for failure to perform radiological surveys to ensure that the potential radiological hazards and extent of radiation levels were evaluated for an equipment transfer box containing a high efficiency particulate air (HEPA) vacuum cleaner removed from the Unit 2 upper reactor cavity. This failure resulted in an un-posted high

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radiation area on the refueling floor of the reactor containment building. Dose rates of 850 mrem/hr at 30 cm were measured.

Description: On March 6, 2014, reactor maintenance personnel working in the Unit 2 upper reactor cavity, a high radiation area (HRA), loaded an equipment transfer box with equipment. Included in the transfer box was a HEPA vacuum cleaner that had been used to clean bolt holes for the cavity seal ring installation. The transfer box was subsequently lifted to the reactor head laydown area of the refueling floor of the Reactor Containment Building, a radiation area. Radiation Protection (RP) was not aware that the transfer box was lifted out of the Unit 2 upper reactor cavity, and consequently radiological surveys were not performed. RP personnel were on the refueling floor engaged in other reactor containment building activities. An un-posted HRA was identified after a crane operator, working in close proximity to the equipment transfer box, received an ED dose rate alarm of 108 millirem per hour (mrem/hr). The crane operator responded appropriately and reported to the RP control point. Prior to completion of the crane operator's ED alarm investigation, a second crane operator was dispatched to continue polar crane operations. Subsequently, the second crane operator received an ED dose rate alarm of 84 mrem/hr when the crane lift required the operator to be in close proximity of the transfer box. The licensee's radiological surveys of the HEPA vacuum cleaner during the investigation of the event found the dose rates to be 9,000 mrem/hr on contact and 850 mrem/hr at 30 cm which corresponded to High Radiation Area conditions.

Analysis: Failure to perform radiological surveys of the transfer box when being removed from the U2 upper reactor cavity in accordance with 10 CFR 20.1501(a) to ensure the potential radiological hazards and extent of radiation levels were understood and controlled was a performance deficiency. The finding was determined to be more than minor because it is associated with the Program and Process attribute of the Occupational Radiation Safety cornerstone, and adversely affected the cornerstone objective to ensure adequate protection of worker health and safety from exposure to radiation, in that the operators were unnecessarily exposed to HRA conditions. The finding was evaluated in accordance with IMC 0609, Appendix C, where it was determined to be Green because it did not involve ALARA planning or work controls, was not an overexposure, did not contain a substantial potential for an overexposure, and the ability to assess dose was not compromised. The inspectors determined that this issue had a cross-cutting aspect of Human Performance (H) Field Presence (H.2) because RP supervisors did not oversee work activities by observing and reinforcing standards and expectations to perform radiological surveys of the transfer box while being removed from the reactor cavity.

Enforcement: 10 CFR 20.1501(a) requires that surveys be made that are reasonable under the circumstances to evaluate the magnitude and extent of radiation levels. TS 6.12.1, states, in part, that in lieu of the requirements of 10 CFR 20.1601, each high radiation area, as defined in 10 CFR 20, in which the intensity of radiation is greater than 100 mrem per hour, shall be barricaded and conspicuously posted. 10 CFR 20.1003 defines survey as an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. Contrary to this, on March 6, 2014, an equipment

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box containing a HEPA vacuum cleaner with a dose rate of 850 mrem/hr at 30 cm was removed from the Unit 2 upper reactor cavity without an adequate survey to evaluate the radiation levels. This resulted in an un-posted HRA on the refueling floor of the Reactor Containment Building that was subsequently identified by ED dose rate alarms for two crane operators working in close proximity to the equipment box. Immediate corrective actions taken by the licensee were to post and control access to the equipment transfer box, and place the HEPA vacuum cleaner in a shielded container. Because this finding was of very low safety significance and entered into the licensee's CAP as ARs 01946341 and 01946351, this finding is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy (NCV 05000389/2014002-01, Noncompliance with Barricading and Posting Requirements).

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Event and Effluent Program Reviews: The inspectors reviewed the 2012 Annual Radiological Effluent Release Report (ARERR) documents for consistency with requirements in the Offsite Dose Calculation Manual (ODCM) and TS requirements. Routine and abnormal effluent release results and reports, as applicable, were reviewed and discussed with responsible licensee representatives. Status of the radioactive gaseous and liquid effluent processing and monitoring equipment including operability issues, and applicable equipment changes, as described in the UFSAR and current ODCM were discussed with responsible staff.

Equipment Walk-downs: The inspectors walked-down and discussed selected components of Unit 1 (U1) and Unit 2 (U2) gaseous processing systems, and selected U1 and U2 liquid waste processing and discharge systems to ascertain material condition, configuration and alignment. To the extent practical, the inspectors observed and evaluated the material condition of in-place liquid waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. The walk-downs conducted with Chemistry personnel included discussion and evaluation of observed leaks, material condition, status of in-place plant work order tags, configuration controls associated with the U1 and U2 Spent Fuel Pool tell-tale drains, outside waste monitor tanks, and associated piping including the process radiation monitor for this system.

Instrumentation and Equipment

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

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Effluents: The inspectors reviewed selected gaseous release permits for releases utilizing the U1 and U2 containment mini-purges and discussed these with cognizant licensee representatives. The inspectors reviewed 10 CFR 61 analysis data for expected nuclide distributions used to quantify effluents, the treatment of hard to detect nuclides, determination of appropriate calibration nuclides for effluent analysis instruments.

Ground Water Protection: The licensee's implementation of the Industry Ground Water Protection Initiative was reviewed for changes since the last inspection conducted in October 2012. This review included evaluation of onsite monitoring results for installed groundwater monitoring wells, vaults, manholes, and onsite ponds. The inspectors discussed and evaluated licensee actions associated with potential releases to the groundwater environs to include the recent U1 Notice of Unusual Event declared by the licensee for activities associated with the severe rain storm where water levels approached storm drain system capacities (AR 01932155).

Problem Identification and Resolution: The inspectors reviewed selected CAP documents in the areas of gaseous and liquid effluent processing and release activities. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures.

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

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation: The inspectors observed routine sample collection and surveillance activities as required by the licensee's environmental monitoring program. The inspectors noted the material condition and operability of airborne particulate filter and iodine cartridge sample stations and observed collection of weekly air samples at selected monitoring locations. The inspectors checked environmental thermoluminescent dosimeters for material condition at selected sites. The inspectors also observed collection of surface water samples and sediment samples in the discharge canal and the collection of broadleaf vegetation samples at ODCM required locations. Licensee actions for missed environmental monitoring samples were

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reviewed and discussed. In addition, the inspectors reviewed and evaluated land use census results, changes to the ODCM, monitoring for hard-to-detect radionuclides and discussed these programs with licensee staff.

The inspectors reviewed current calibration records for selected environmental air samplers. The inspectors also reviewed the 2011 and 2012 Radiological Environmental Operating Reports, the 2012 Annual Radioactive Effluent Report, results of the 2012 and 2013 inter-laboratory cross-check program and procedural guidance for environmental sample collection and processing. Selected environmental measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements. The inspectors reviewed the licensee's groundwater monitoring program as part of Inspection Procedure 71124.06.

Meteorological Monitoring Program: The inspectors observed the physical condition of the meteorological tower and its instrumentation and discussed equipment operability and maintenance history with licensee staff. The inspectors evaluated transmission of locally generated meteorological data to other licensee groups such as main control room operators. For the meteorological measurements of wind speed, wind direction, and temperature, the inspectors reviewed applicable tower instrumentation calibration records and evaluated meteorological measurement data recovery results for 2012 and 2013.

Problem Identification and Resolution: The inspectors reviewed CAP documents in the areas of radiological environmental monitoring and meteorological tower maintenance. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with licensee procedures. The inspectors also reviewed recent self-assessment results and discussed results with licensee staff.

REMP implementation and meteorological monitoring activities were reviewed against 10 CFR Part 20; Appendices E and I to 10 CFR Part 50; TS Sections 6.8 and 6.9; FSAR Chapter 2, ODCM; RG 4.15, Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment; Safety Guide 23, "Onsite Meteorological Programs"; Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program" – 1979; and approved licensee procedures. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

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2RS8 Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

a. Inspection Scope

Waste Processing System Program Review: The inspectors reviewed and discussed the status of the radioactive waste processing systems relative to the current UFSAR and Process Control Program (PCP). The inspectors discussed component function, processing system changes, and radwaste program implementation with licensee staff. The inspectors reviewed and discussed with licensee personnel implementation of the Self Engaging Dewatering Systems fill head for resin sluicing and dewatering, and the performance of resin transfers.

For DAW and Waste Water Ion Exchanger Resin (WIX) the inspectors evaluated analyses for hard-to-detect nuclides, reviewed the use of scaling factors, and examined quality assurance (QA) comparison results between licensee waste stream characterizations and outside laboratory data. Waste stream sampling methodologies were evaluated and discussed with responsible radwaste staff.

Radioactive Material Storage: During walk-downs of radioactive material and radioactive waste storage areas, the inspectors observed the physical condition and labeling of storage containers and the posting of Radioactive Material Areas. The inspectors also reviewed licensee procedural guidance for storage and monitoring of radioactive material. RCA storage areas evaluated included select U1 and U2 auxiliary building locations and a proposed long term storage building under construction.

Radioactive Waste System and Radioactive Material Storage Area Walkdowns: During inspector walk-downs, accessible sections of the liquid and solid radwaste processing systems were assessed for material condition and conformance with UFSAR. Inspected equipment included radwaste processing and holdup tanks; radwaste system transfer piping, resin and filter components; and dewatering system equipment.

Transportation: Selected shipping records were reviewed for consistency with licensee procedures and compliance with NRC and DOT regulations. The inspectors reviewed emergency response information, DOT shipping package classification, waste classification, and radiation survey results. Licensee procedures for opening and closing shipping containers were compared to package manufacturer's requirements. In addition, status of training for selected individuals currently qualified to ship radioactive material was reviewed.

Problem Identification and Resolution: The inspectors reviewed selected CAP documentation in the areas of radwaste processing and radwaste/radioactive material shipping. The inspectors evaluated the licensee's ability to identify and resolve identified issues in accordance with procedure PI-AA-204, Condition Identification and Screening Process, Rev. 22 and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 23.

Radwaste processing activities and equipment configuration were reviewed for compliance with the licensee's PCP, UFSAR Chapter 11; TS 6.8, Procedures, Programs and Manuals and approved procedures and TS 6.13, Process Control Program. Waste stream characterization analyses were reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 61, and guidance provided in the Branch Technical Position on Waste Classification (1983). Transportation program implementation was reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 71, 49 CFR Parts 172-178, as well as the guidance provided in NUREG-1608. Training activities were assessed against 49 CFR Part 172 Subpart H. Documents reviewed during the inspection are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Initiating Events Cornerstones

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period January 1, 2013 through December 31, 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 NAP-206, NRC Performance Indicators, were used to check the reporting for each data element. The inspectors checked operator logs, plant status reports, condition reports, system health reports, and PI data sheets to verify that the licensee had identified the required data, as applicable. Documents reviewed are listed in the Attachment.

- Unit 1 Unplanned Scrams per 7000 Critical Hours
- Unit 2 Unplanned Scrams per 7000 Critical Hours
- Unit 1 Unplanned Scrams With Complications
- Unit 2 Unplanned Scrams With Complications
- Unit 1 Unplanned Power Changes per 7000 Critical Hours
- Unit 2 Unplanned Power Changes per 7000 Critical Hours

b. Findings

No findings were identified.

.2 Radiation Safety Cornerstones

a. Inspection Scope

Occupational Radiation Safety Cornerstone: The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from September through December 2013. For the assessment period, the inspectors reviewed electric dosimeter alarm logs and selected CAP documents related to controls for exposure significant areas and events. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the report Attachment.

Public Radiation Safety Cornerstone: The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from September through December 2013. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and CAP related to Radiological Effluent TS/ODCM issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the report 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 Annual Sample: Apparent Cause Evaluation Associated with Lifting a Power Operated Relief Valve (PORV) during Fill and Venting of the Unit 1 Reactor Coolant System

a. Inspection Scope

On January 13, 2014, the licensee submitted a Special Report (L-2014-013) to the NRC documenting an unplanned Unit 1 reactor coolant system (RCS) power operated relief valve lift that occurred on December 15, 2013. The PORV lifted and reseated several times after starting a reactor coolant pump (RCP) during RCS fill and venting. A RCP was started to sweep any gases from the RCS to the reactor vessel and pressurizer from which it would be vented. The RCS fill and vent was a preplanned activity following draining of the RCS to allow replacement of a RCP seal package. AR 1927559 addressed the corrective actions associated with the special report. The AR was reviewed by the inspectors in detail to evaluate the effectiveness of the licensee's corrective actions. The inspectors also assessed whether the issue was properly identified, documented accurately and completely, properly classified and prioritized, adequately considered extent of condition, generic implications, common cause, and previous occurrences, adequately identified apparent causes, and identified appropriate and timely corrective actions. The inspectors verified the licensee's actions were in accordance with licensee procedures, PI-AA-204, Condition Identification and Screening, and PI-AA-205, Condition Evaluation and Corrective Actions.

b. Findings and Observations

No findings were identified. The inspectors found that the licensee's apparent cause evaluation (ACE) for this event was comprehensive and thorough. The inspectors determined that the corrective actions completed were appropriate to address the identified cause.

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

.1 Unit 1 and 2 Notification of Unusual Event (NOUE) Declaration

a. Inspection Scope

On January 9, 2014 with both units operating at 100 percent power, a stalled weather front resulted in excess of 7 inches of rainfall on the site over a short period of time. The site met Emergency Action Level (EAL) HU1 which, in part, requires an NOUE declaration for a natural occurrence affecting the protected area if water levels are approaching storm drain capacity. The site was in a NOUE for approximately 6 hrs. The unusual event was terminated at approximately 0001 hours on January 10, when the storm drain levels had lowered and actions were taken to ensure the site's storm drain system was fully functional.

The inspectors verified the event was properly classified and notifications were made in accordance with the emergency plan implementing procedure EPIP-01, Classification of Emergencies, and EPIP-02, Duties and Responsibilities of the Emergency Coordinator.

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During the event, storm water entered the reactor auxiliary building (RAB) through degraded electrical conduits that were later found not to have internal flood seals.

b. Findings

Introduction: The inspectors identified an unresolved item concerning external flood water entering the RAB through conduits that did not have internal flood seals installed.

Description: On January 9, 2014, during a heavy rainfall event, the site's storm drain system reached capacity due to a partially blocked culvert. As a result, the storm water entered the Unit 1 component cooling water (CCW) area and then overflowed into the emergency core cooling system (ECCS) tunnel located adjacent to the reactor auxiliary building. The water entered two corroded electrical conduits in the tunnel and flowed into the Unit 1 reactor auxiliary building (RAB) -0.5 foot elevation. The licensee cycled drain valves to transfer the water to the ECCS room sump (RAB -10 foot elevation) and pumped the water to an internal storage tank. No safety-related equipment was affected as a result of the water intrusion into the RAB. Six conduits at RAB penetration P19, including the two degraded conduits that allowed water entry into the -0.5 foot elevation, were found not to have internal flood seals installed. A few days after the event, the licensee installed flood seals in the six non-safety-related conduits that penetrated the RAB at penetration P19. Additionally, the licensee initiated a root cause evaluation to determine the cause of the missing conduit flood seals.

The issue is an unresolved item pending completion of the inspector's review of the licensee's evaluation associated with this event (URI 05000335/2014002-02, Evaluation of January 9, 2014 RAB Flooding).

.2 (Closed) LER 05000389/2013001-00 (and Supplement -01) Unplanned Reactor Trip Due to Algae

a. Inspection Scope

The licensee submitted LER 05000389/2013001-00 (and Supplement -01) to the NRC in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in manual actuation of the reactor protection system including reactor scram or reactor trip. The inspectors reviewed the LER and the licensee's root cause evaluation to gain a better understanding of the circumstances which led to manual reactor trip and to verify that the plant systems and operators responded to the event as required. The inspectors evaluated the accuracy of the information submitted in the LER, the licensee's conformance with regulatory requirements, and potential generic implications related to the event. Additionally, the inspectors evaluated the licensee's corrective actions to determine if the actions appropriately addressed the causes that were identified in the licensee's root cause evaluation.

b. Findings

Introduction: A green self-revealing finding was identified for the licensee's failure to provide adequate work instructions. The maintenance work instructions for a debris filter system (DFS) backwash valve motor operator did not contain adequate details to ensure the motor operator was installed correctly. The incorrectly installed motor operator prevented the DFS from mitigating an influx of algae into the circulating water system and ultimately resulted in the need for operators to manually trip the reactor.

Description: On May 31, 2013, while Unit 2 was at approximately 40 percent power, algae accumulation in the DFS for the main generator 2A1 condenser waterbox resulted in a high differential pressure condition across the DFS. The high differential pressure reached the limit for continued operation of the 2A1 circulating water pump (CWP) and the reactor was manually tripped prior to securing the 2A1 CWP. Prior to the event, the 2A2 CWP had been removed from service to support 2A2 condenser tube repairs. Plant operation could not continue with both A train CWPs out of service. The manual reactor trip was uncomplicated and all control element assemblies fully inserted.

The licensee's root cause evaluation (RCE) determined the cause of this event to be an incorrectly installed debris backwash valve. Inadequate work order instructions for the removal and reinstallation of the backwash valve motor operator resulted in the valve position being opposite of the indicated position. This resulted in the valve closing, instead of opening as required, when the 2A1 DFS was in operation. During the algae intrusion event, adequate backwash flow could not be established to clean the DFS with the closed backwash valve. Licensee administrative procedure ADM-0010432, Control of Plant Work Orders, revision 76, section 6.3, step 20.A.2, states, in part, that if a work task is particularly complicated or has other demanding requirements (i.e., beyond skill of the craft), then sufficient details to accomplish the task must be provided by the work order.

The licensee determined that an overhaul of the motor operator for this backwash valve was last completed in August 2012. Backwash valve body design had no internal stops and the stem and disc can freely spin when it is not attached to the motor operator. The torque drive nut that connects to the valve stem adapter has four keyed slots that can be installed in any orientation. The work order used for this maintenance provided no guidance for verifying proper valve alignment prior to installation of the motor operator. As a result, the incorrect valve stem adapter keyed slot was used.

This issue was placed in the licensee's corrective action program as ARs 1878615 and 1911638. The licensee completed actions to correct the installation of the debris backwash valve motor operator and added detailed instructions to the maintenance and repair procedure for the backwash valve to ensure proper valve position prior to installation of the motor operator.

Analysis: The failure to provide adequate work instructions for installation of the backwash valve motor operator was a performance deficiency. The performance deficiency was more than minor because it was associated with the equipment reliability attribute of the initiating events cornerstone and adversely affected the cornerstone

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objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during power operations. Specifically, the 1A2 DFS backwash valve was installed incorrectly in August 2012. This degraded the component's ability to mitigate an algae intrusion event on May 31, 2013, and resulted in a manual reactor trip. The finding was determined to be of very low safety significance (Green) based on Exhibit 1, Initiating Events Screening Questions, found in Inspection Manual Chapter 0609, Significance Determination Process, Appendix A, Significance Determination Process for Findings At-Power (June 19, 2012). This was due to the fact that the condition did not cause a loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable shutdown condition.

The inspectors determined the cause of this finding was associated with a cross-cutting aspect of providing complete and accurate documentation in the documentation component of the human performance area. Specifically, the licensee did not provide work instructions with enough detail to properly reinstall the 1A2 backwash valve motor operator (H.7).

Enforcement: This finding does not involve enforcement action because no violation of a regulatory requirement was identified. The DFS backwash valve was not a safety-related component required by NRC regulations. Because this finding does not involve a violation and is of very low safety significance, it is identified as a Finding. FIN 05000389/2014002-03, Failure to Provide Detailed Work Instructions Resulted in Degraded Debris Filter System Performance and resulted in a Manual Reactor Trip.

.3 (Closed) LER 05000335/2013-003-00, Latent MV-08-03 Contactor Failure Results in Operation Prohibited by Tech Specs

a. Inspection Scope

The LER documented that the 1C AFW pump was inoperable for a period of time that was greater than allowed by TS. The licensee determined that the total out of service time for the 1C AFW pump was 98 hours which exceeded the TS allowed outage time and shutdown completion time of 84 hours.

The inspectors reviewed the LER and the associated corrective action document (AR 1929130) to verify the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors also reviewed the LER and AR to identify any licensee performance deficiencies associated with the issue.

b. Findings

On December 20, 2013, the 1C AFW pump was declared inoperable in order to perform planned maintenance on the pump's trip and throttle valve (MV-08-03). After completion of the maintenance, MV-08-03 failed to open during post maintenance testing. The valve failed due to a stuck open contact in the auxiliary switch for the valve's motor line contactor. The failure was unrelated to the valve maintenance. The licensee determined that the auxiliary switch contact failed to return to its standby position following the last successful operation of the valve on December 17, 2013. The licensee

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concluded that rubbing between the switch operating mechanism and the switch housing had degraded the operation of the auxiliary contact. The licensee properly installed and tested the switch in November 2013. The cause of the contact failure on December 20, 2013, had not previously been recognized as a failure mode for this type of switch. Additionally, there were no symptoms available to operators to indicate the contact had failed to return to its normal standby position. The inspectors concluded that there was no performance deficiency associated with the switch failure. The inspectors utilized available risk-informed tools to assess the safety significance of the 1C AFW pump inoperability. Based on the short amount of time that the 1C AFW pump was inoperable, the inspectors concluded this event was of very low safety significance.

St. Lucie Unit 1 TS limiting condition for operation 3.7.1.2, "Auxiliary Feedwater System," required at least three independent, operable AFW pumps in plant operating modes one through three. With one AFW pump inoperable, the inoperable pump must be returned to operable status within 72 hours or Unit 1 placed in hot standby within the next twelve hours. Contrary to the above, Unit 1 operated for 98 hours from December 17, 2013, until December 20, 2013, with the 1C AFW pump inoperable due to a failed auxiliary contact for the trip and throttle valve. Although a violation of TS occurred; the violation was not attributable to an equipment failure that was avoidable by reasonable licensee quality assurance measures or management controls. Therefore, the TS 3.7.1.2 violation was not associated with a licensee performance deficiency. The inspectors concluded that the violation would normally be characterized as Severity Level IV based on its very low safety significance. The NRC exercised enforcement discretion (Enforcement Action (EA)-14-047) in accordance with Section 2.2.4.d of the Enforcement Policy because the violation was not associated with a licensee performance deficiency; and therefore, it will not be considered in the assessment process or the NRC's Action Matrix. This issue was documented in the licensee's corrective action program as AR 1929130. Licensee corrective actions included: 1) installing and testing a new MV-08-03 auxiliary switch, 2) revision of AFW operating procedures to visually inspect the position of all auxiliary contactor switches of the same type following operation of the AFW system; and 3) modifying the contactor preventative maintenance procedure to check for binding of the switch and to verify tightness of the switch housing to prevent any misalignment between the switch and its housing. This LER is closed.

4OA5 Other Activities

.1 Review of Institute of Nuclear Power Operations (INPO) Reports

The inspectors reviewed the final report for the INPO plant assessment conducted in August 2013 to ensure that any issues identified were consistent with the NRC perspectives of St. Lucie plant performance.

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.2 Independent Spent Fuel Storage Facility (ISFSI) Walk down (IP 60855.1)

a. Inspection Scope

The inspectors conducted a walk down of the ISFSI controlled access fenced-in cask area per Inspection Procedure 60855.1, "Operation of an ISFSI at Operating Plants." The inspectors observed each cask building temperature indicator and passive ventilation system to be free of any obstruction allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and radiation protection access controls to the ISFSI area to be functional.

b. Findings

No findings were identified.

.3 Cross-Cutting Aspect Cross-Reference

The table below provides a cross-reference from the 2013 third and fourth quarter findings and associated cross-cutting aspects to the new cross-cutting aspects resulting from the common language initiative. These aspects and any others identified since January 2014 will be evaluated for cross-cutting themes and potential substantive cross-cutting issues in accordance with IMC 0305 starting with the 2014 mid-cycle assessment review.

Finding	Old Cross-Cutting Aspect	New Cross-Cutting Aspect
05000335,389/2013201-01	H.2.c	H.7
05000335,389/2013201-02	H.1.a	H.13
05000335,389/2013201-03	P.1.c	P.2
05000389/2013004-03	H.2.c	H.7
05000335/2013005-02	H.2.a	H.6
05000335,389/2013008-01	H.2.b	H.9

4OA6 Management Meetings (Including Exit Meeting)

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jensen and other members of licensee management on April 10, 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: SUPPLEMENTAL INFORMATION

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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
B. Coffey, Plant General Manager
D. DeBoer, Operations Director
K. Frehafer, Licensing Engineer
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
C. Evans, Region II Legal Counsel and Enforcement Officer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000389/2014002-01	NCV	Noncompliance with Barricading and Posting Requirements (Section 2RS1)
05000335/2014002-02	URI	Evaluation of January 9, 2014 RAB Flooding (Section 4OA3.1)
05000389/2014002-03	FIN	Failure to Provide Detailed Work Instructions Resulted in Degraded Debris Filter System Performance and resulted in a Manual Reactor Trip (Section 4OA3.2)

Closed

05000389/2013001-00,01	LER	Unplanned Reactor Trip Due to Algae (Section 4OA3.2)
05000335/2013-003-00	LER	Latent MV-08-03 Contactor Failure Results in Operation Prohibited by Tech Spec (Section 4OA3.3)

LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OP-AA-102-1002, Seasonal Readiness

Section 1R04: Equipment Alignment

2-NOP-09.11, Auxiliary Feedwater System Initial Alignment
2-NOP-09.02, Auxiliary Feedwater System Operation
1-NOP-03.11, High Pressure Safety Injection Initial Alignment
2-NOP-59.01A, 2A Emergency Diesel Generator Standby Alignment
2-NOP-59.01B, 2B Emergency Diesel Generator Standby Alignment
2-NOP-03.11, High Pressure Safety Injection Initial Alignment
2-NOP-14.01, Component Cooling Water System Initial Alignment
2-NOP-14.01, Component Cooling Water Operation

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
RCB Fire Extinguisher Operability Inspection
Fire Extinguisher Outage Inspection

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

2-AOP-01.08, RCS Leakage Abnormal Operation
2-AOP-22.01, Rapid Downpower
2-AOP-08.02, Steam Generator Tube Leak
1-AOP-24.01, RAB Flooding
1-AOP-50.01, 125V DC Ground Diagnostic
1-AOP-50.05, 125V DC Bus 2C Ground Isolation
1/2-AOP-53.01, Main Generator
1/2-NOP-23.02, Steam Generator Blowdown System Operation
2-EOP-01, Standard Post Trip Actions
2-EOP-03, Loss of Reactor Coolant
2-EOP-09, Loss of Offsite Power/Loss of Forced Circulation
EPIP-01, Classification of Emergencies
EPIP-02, Duties and Responsibilities of the Emergency Coordinator

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
Unit 1 CVSC Maintenance Rule (a)(1) Status Evaluation dated November 2, 2013
Unit 1 CVSC Maintenance Rule (a)(1) Action Plan dated December 12, 2013
Unit 1/2 CVSC System Health Report 4th quarter 2013
Unit 1 CVCS ARs: 1877785, 1907570, 1907647, 1907636, 1924471, and 1926391
Unit 1 AFW system Maintenance Rule (a)(1) Status Evaluation dated February 19, 2014
Unit 1 AFW System Health Report 4th quarter 2013

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
 ADM-09.23, Shutdown Safety Assessment

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-59.01A, 1A Emergency Diesel Generator Monthly Surveillance
 1-PME-59.01, Emergency Diesel Electrical Periodic Maintenance and Inspection
 1-OSP-09.01C, 1C Auxiliary Feedwater Code Run
 2-OSP-07.02B, 2B Containment Spray Pump Safeguards Full Flow Test

Section 1R20: Refueling and Other Outage Activities

ADM-09.14, Reduced Inventory / Mid-Loop
 ADM-09.23, Shutdown Safety Assessment
 2-GMM-68.02, Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches
 2-GMM-01.02A, Reactor Vessel Maintenance – Sequence of Operation Component Removal
 2-NOP-03.05, Shutdown Cooling
 2-NOP-01.03, Draining RCS
 2-NOP-01.04, RCS Reduced Inventory and Mid-Loop Operation
 AP-0010145, Shutdown Cooling Controls
 2-GOP-123, Turbine Shutdown – Full Load To Zero Load
 2-GOP-305, Reactor Plant Cooldown – Hot Standby To Cold Shutdown

Section 1R22: Surveillance Testing

ADM-29.02, ASME Code Testing of Pumps and Valves
 2-OSP-59.01B, 2B Emergency Diesel Generator Monthly Surveillance

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
 HPP-1, Preparing Radiation Work Permits, Rev. 37
 HPP-30, Personnel Monitoring, Rev. 55
 HPP-41, Movement of Material and Equipment, Rev. 32
 PI-AA-204, Condition Identification and Screening Process, Rev. 22
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. 23
 RP-AA-101, Personnel Monitoring Program, Rev. 0
 RP-AA-102-1000, Alpha Monitoring, Rev. 0
 RP-AA-102-1001, Area Radiological Surveys, Rev. 0
 RP-AA-103-1001, Posting Requirements for Radiological Hazards, Rev. 1
 RP-AA-103-1002, High Radiation Area Controls, Rev. 1

RP-AA-107-1002, Requirements for Radioactive Materials Stored Outdoors, Rev. 0
 RP-AA-107, Radioactive Material Control Program, Rev. 0
 RP-AA-107-1003, Unconditional and Conditional Release of Material, Rev. 1
 RP-SL-101-1003, Personnel Contamination Monitoring and Decontamination, Rev. 0
 RP-SL-101-1006, Access Control Using Alarming Dosimeters, Rev. 1
 RP-SL-102-1003, Discrete Radioactive Particles, Rev. 2
 RP-SL-102-1004, Radiological Postings, Rev. 0
 RP-SL-102-2000, Air Sampling, Rev. 2
 RP-SL-103-1003, ISFSI Radiological Controls, Rev. 2
 RP-SL-103-2005, RP Controls of Spent Fuel Pool Non-SNM, Rev. 1
 RP-SL-103-2006, Radiation Protection Outage Activities, Rev. 5

Records and Data Reviewed

2013 St. Lucie Dry Active Waste 10 CFR 61 Analysis, Dated 02/11/14
 Confirmation Form, 2014 Annual Inventory Reconciliation, Florida Power and Light (Saint Lucie
 1) Dated 01/16/14
 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
 Radiological Work Permit (RWP) Number (No.) 14-2518, Inspections, P.M.s, Transfer canal
 pumps/gate, Handrails and misc support, Tri-Nuc vacuum/hose work and support, Rev. 05
 RWP No. 14-3008, RX Head (Replace), Set on stands, clean/hone RX vessel flange, Set RX
 head, remove stud hole plugs and clean top of stud holes, Remove Guide Pins, Rev. 01
 RWP No. 14-3042, UGS: Remove to Lower Cavity/Replace in RX Vessel, Rev. 01
 RWP No. 14-3319, Upper reactor cavity decon with RX head installed, all support work,
 Apply/remove Strippable paint, Rev. 00
 RWP No. 14-3404, Secondary Side (2A/2B S/G)/Feeding/Debris Screen Repairs, Rev. 01
 RWP No. 14-3427, Hangers, Supports, Deck Plates & Grating: Remove/Replace Hangers
 Supports, Deck Plates & Grating, Set up/Tear Down Temp, Plant Air, Remove/Install, Rev.
 00
 RWP No. 14-3441, Ranger equip/ECT: Install, operate, remove Ranger, Perform ECT tube
 plugging & sleeving, camera inspection, Rev. 04
 RP-SL-103-2005, RP Controls of Spent Fuel Pool Non-SNM, Rev. No. 1, Dated 07/09/13 and
 07/10/13
 VSDS Standard Map Survey Report Survey Nos. PSL-M-20140308-30, Map 1 ISFSI Installation
 Pad, Dated 03/08/14; PSL-M-20140308-30, Map 2 ISFSI-HSM's-Top View, Dated 03/08/14;
 PSL-M-20140323-36, Vacuum #004 Inside Big Red, Dated 03/23/14; PSL-M-20140324-36,
 U2 RCB Steam Generator 'A' Secondary Side 62', Dated 03/24/14; PSL-M-20140324-55, U2
 FHB Spent Fuel Pool 62', Dated 03/24/14; PSL-M-20140325-26, U2 RCB Steam Generator
 'B' Secondary Side 62', Dated 03/25/14; PSL-M-20140326-15, U2 RCB UGS Lift Rig 62',
 Dated 03/26/14; PSL-M-20140327-13, U2 RCB 'A' Steam Generator Platform 18', Dated
 03/27/14; PSL-M-20140327-14, U2 RCB 'A' Steam Generator Platform 18', Dated 03/27/14;
 PSL-M-20140327-7, U2 RCB Upper Reactor Cavity 62', Dated 03/27/14; PSL-M-20140327-
 32, U2 RCB Upper Reactor Cavity 62', Dated 03/27/14

Corrective Action Program (CAP) Documents

Action Request (AR) 01909769
 AR 01911629
 AR 01915647

AR 01920823
 AR 01922481
 AR 01927012
 AR 01946341
 AR 01946351

Section 2RS06: Radioactive Gaseous and Liquid Effluent Treatment

Procedures and Guidance Documents

0-COP-02.18, Chemistry Department Groundwater Protection Sampling, Rev. No. 9
 1-NOP-25.02, Hydrogen Purge System, Rev. No. 18
 2-NOP-25.02, Continuous Containment/Hydrogen Purge System Operation, Rev. No. 14
 C – 200, Offsite Dose Calculation Manual (OCM), Rev. No. 41
 CY-SL-102-0104, Processing Aerated Liquid Wastes, Rev. No. 4
 CY-SL-102-0105, Processing Gaseous Waste, Rev. No. 1
 CY-SL-104-1011, Unit 1 Gaseous Effluent Grab Sampling, Rev. No. 1
 CY-SL-104-1012, Determination of Process Radiation Monitor Setpoints, Rev. No. 0
 CY-SL-104-2011, Unit 2 Gaseous Effluent Grab Sampling, Rev. No. 1
 PI-AA-204, Condition Identification and Screening Process, Rev. No. 22
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. No. 23

Records and Data Reviewed

Analytix, Inc, Cross Checks 2012, for 1 Liter Marinelli Beaker, 16 ml Cocktail Vial, Charcoal, Glass Sphere, Gross Alpha, Gross Beta Cold Lab, Gross Beta Hot Lab, Particulate, Tritium Cold Lab, and Tritium Hot Lab
 CY-SL-102-0104, Processing Aerated Liquid Wastes, Rev. No. 4, Attachment 11, Settling Basin/Dewatering Well Release, Dated 01/09/14
 CY-SL-104-1011, Unit 1 (U1) Gaseous Effluent Grab Sampling (GEGS), Rev. No. 1, Attachment 1, Sampling U1 Eberline Skids, Fuel Handling Building, Dated 02/04/14
 CY-SL-104-1011, U1 GEGS, Rev. No. 1, Attachment 1, Sampling U1 Eberline Skids, Plant Vent, Dated 02/04/14
 Eckert & Zeigler, Analytix, Report of Measurement, Radiochemistry Cross Check, Florida Power Light/St Lucie, 4th Quarter 2012
 Equipment/System Out of Service Logs from January 2012 to December 2013
 Florida Power and Light Company (FP&L), St Lucie Plant (PSL), Flow Diagram Waste Management System, Drawing 8770-G-078, Sheets 163A, Rev. No. 36; and 165, Rev. No. 16
 FP&L, PSL, HVAC – Air Flow Diagram, Drawing 8770-G-862, Rev. 35
 FP&L, PSL, HVAC – Control Diagrams, Drawing 8770-G-878, Sheet 1, Rev. 38
 FP&L, PSL, HVAC – Control Diagrams, Drawing 8770-G-879, Sheet 2, Rev. 44
 FP&L, Safety Evaluation, 2000 FSAR Review Findings Requiring Changes or Clarifications to the FSARs in Accordance with 10 CFR 50.59, PSL, Units 1 and 2, PSL-ENG-SENS-00-108, EC 280623, Rev. 1
 GEL Laboratories, LLC, 10 CFR Part 50/61 Certificate of Analysis, GEL Sample ID: 302557007, Client Sample ID: 120-051 DAW Comp, Dated 06/01/12
 NCS Corporation, Radioiodine Penetration/Efficiency Test Report, FP&L, PSL, 2-HVE-13B, Dated 08/07/12
 St. Lucie Units 1 and 2 2012 Annual Radioactive Effluent Release Report, Dated 02/28/13
 U1 Gaseous Release Permit (GRP), No. G-14-033-B, Unit 1 Mini-Purge, Dated 02/05/14

Attachment

Unit 2 (U2) GRP, No. G-14-036-B, Unit 2 Mini-Purge, Dated 02/05/14
 U1 Liquid Release Permit (LRP), Nos. L-14-001-B, Dated 01/09/14; L-14-002-B, Dated
 01/11/14; and L-14-003-B, Dated 01/11/14

Corrective Action Program (CAP) Documents

AR 01814747
 AR 01827484
 AR 01855636
 AR 01904833
 AR 01932155
 AR 01932155

Section 2RS07: Radiological Environmental Monitoring Program

Procedures and Guidance Documents

0-SMI-57.01, Meteorological Data System Semi-annual Calibration, Rev. No. 3
 Adm-27.12, Scheduling of Land Utilization Environmental Surveillances, Rev. No. 5
 C-200, Offsite Dose Calculation Manual, Rev. No. 41
 EV-SR-104-1001, Radiological Monitoring Program, Rev. No. 1
 PI-AA-204, Condition Identification and Screening Process, Rev. No. 22
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. No. 23
 Sampling Procedure 1, Collection of Air Particulates and Radioiodines, Rev. No. 11
 Sampling Procedure 4, Collection of Surface Water, Rev. No. 7
 Sampling Procedure 13, Collection of Drinking Water and Ground Water, Rev. No. 6

Records and Data Reviewed

10 CFR Part 50/61 Certificate of Analysis for DAW Smear 110-076, Dated 05/20/11
 10 CFR Part 50/61 Certificate of Analysis for DAW Smear 120-051, Dated 06/20/12
 10 CFR 50.59 APPLICABILITY DETERMINATION for EC-275630, Rev. 0A, Storm Water
 System Improvements
 10 CFR 50.75(g) documentation, Contaminated Soil from Storm Drain Project, Dated 11/01/12
 2011 Annual Radiological Environmental Operating Report for Calendar Year 2011, Dated
 04/24/12
 2012 Annual Radioactive Effluent Release Report, Dated 03/01/13
 2012 Annual Radiological Environmental Operating Report for Calendar Year 2012, Dated
 04/30/13
 ADM-27.12, Appendix D, Schedule of Environmental Surveillances and Inspections, 2012
 Air Sampler Flow Calibrations for Sample Stations H12, H30, H32 & H34 performed 12/02/13
 Air Sampler Flow Calibrations for Sample Stations H12, H30, H32 & H34 performed 05/30/13
 Air Sampler Flow Calibrations for Sample Stations H12, H30, H32 & H34 performed 11/26/12
 Calendar Year (CY) 2012 Annual Radiological Environmental Operating Report – DOE-MAPEP
 26 and DOE-MAPEP 27 Results
 CY 2013 Annual Radiological Environmental Operating Report – DOE-MAPEP 28 and DOE-
 MAPEP 29 Results
 NEI Ground Water Protection Initiative (NEI-07-07) Compliance Assessment, Conducted 03/28
 and 03/29/13
 St Lucie (A) and (B) Data Recovery Summary, Year to Date – December 2013

WO 40176290, FSAR/PM0 110/Met Tower Semiannual Calibrations, Dated 02/06/13
 WO 40049546, FSAR/PM0 110/Met Tower Semiannual Calibrations, Dated 08/08/13
 WO 40230409, PM0 021/Meteorological Station Monthly Surveillance, Dated 11/25/13

CAP Documents

State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant
 Surveillance Program Semi-annual self-assessment: January – June 2012
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant
 Surveillance Program Semi-annual self-assessment: July – December 2012
 State of Florida Department of Health Environmental Radiation Control Nuclear Power Plant
 Surveillance Program Semi-annual self-assessment: January – June 2013
 AR No. 01814743
 AR No. 01814747
 AR No. 01867121
 AR No. 01930771
 AR No. 01938786
 AR No. 01938797

Section 2RS08: Radioactive Solid Waste Processing and Radioactive Material Handling, Storage, and Transportation

Procedures and Guidance Documents

Administrative Procedure No. 0520025, Process Control Program, Rev. 13C
 CS-OP-PR-008-161049, Setup, Operation and Dewatering Using Energy Solutions Self-
 Engaging Dewatering System Fill-head at St. Lucie, Rev 0
 HP-47, Classification of Radioactive Waste Material for Land Disposal, Rev. 28C
 HP-48, Activity Determinations for Radioactive Material Shipments, Rev 6D
 HP-49, Dewatering Radioactive Bead Resins, Rev. 15
 HP-49A, Transfer of Radioactive Bead Resins, Rev. 28
 RP-AA-108-1002, Shipment of Radioactive Material, Rev. 2
 RP-AA-108-1004, Packaging Radioactive Materials for Shipment, Rev 0

Records and Data Reviewed

2013 St. Lucie Dry Active Waste 10CFR61 Analysis, 02/11/14
 2013 St. Lucie Waste Water Ion Exchanger Resin "WIX" 10CFR61 Analysis, 04/02/14
 Evaluation of V06231 Leakage for NEI 07-07 Voluntary Notification
 FPL-PSL Shipment # 12-148, Radioactive Material Shipment Records, 09/06/2012
 FPL-PSL Shipment # 13-018, Radioactive Material Shipment Records, 05/13/2013
 FPL-PSL Shipment # 13-046, Radioactive Material Shipment Records, 07/26/2013
 FPL-PSL Shipment # 14-032, Radioactive Material Shipment Records, 03/25/2014

CAP Documents

AR 01791726
 AR 01899362
 AR 01935793
 AR 01946630

Section 40A1 Performance Indicator Verification

Procedures, Guidance Documents and Manuals

LI-AA-204-1001, NRC Performance Indicator Guideline, Rev. 3

Records and Data Reviewed

ADM-25.02 Appendix O, Occupational Exposure Control Effectiveness Data Sheet for 4th Quarter 2013

SENTINEL Electronic Dosimeter Alarm Report for Date Range 10/01/2013 – 12/31/2013

St. Lucie Units 1 and 2 2012 Annual Radioactive Effluent Release Report, Dated 02/28/13

U1 GRP, No. G-14-525-B, Dated 01/05/14

U1 LRP, No. L-14-094-B, Dated 01/06/14

U2 GRP, No. G-13-490-C, Dated 12/10/13

CAP Documents

AR 01915159

AR 01924730

AR 01908391

AR 01914408

AR 01918232

AR 01909081