



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

July 27, 2011

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

**SUBJECT: TURKEY POINT NUCLEAR PLANT – NRC INTEGRATED INSPECTION
REPORT 05000250/2011003 AND 05000251/2011003**

Dear Mr. Nazar:

On June 30, 2011, the U. S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Units 3 and 4. The enclosed inspection report documents the inspection results, which were discussed on July 14, 2011, with Mr. Kiley and other members of your staff.

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

The report documents one self-revealing finding of very low significance (Green). This finding was determined to involve a violation of NRC requirements. Because of the very low safety significance and because it was entered into your corrective action program, the NRC is treating this issue as a non-cited violation (NCV) consistent with the NRC Enforcement Policy. If you contest any 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 20555-001; 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 Turkey Point. In addition, if you disagree with the characterization of any finding 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 Turkey Point.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document

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system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

Docket Nos.: 50-250, 50-251
License Nos.: DPR-31, DPR-41

cc w/encl. (See page 3)

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PUBLICLY AVAILABLE
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 ADAMS: X Yes
 ACCESSION NUMBER: ML112082835
 X SUNSI REVIEW COMPLETE X FORM 665 ATTACHED

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Letter to Mano Nazar from Daniel W. Rich dated July 27, 2011

SUBJECT: TURKEY POINT NUCLEAR PLANT – INTEGRATED INSPECTION REPORT
05000250/2011003 AND 05000251/2011003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-250, 50-251

License Nos.: DPR-31, DPR-41

Report No: 05000250/2011003, 05000251/2011003

Licensee: Florida Power & Light Company (FPL)

Facility: Turkey Point Nuclear Plant, Units 3 & 4

Location: 9760 S. W. 344th Street
Homestead, FL 33035

Dates: April 1 to June 30, 2011

Inspectors: J. Stewart, Senior Resident Inspector
M. Barillas, Resident Inspector
G. Kuzo, Senior Health Physicist (2RS8)
W. Loo, Senior Health Physicist (2RS1-3)
C. Dykes, Health Physicist (2RS1-3)
J. Paige, HQ/NRR/Project Manager
S. Sandal, Senior Reactor Inspector (4OA5)
M. Coursey, Reactor Inspector (4OA5)
R. Williams, Reactor Inspector (4OA5, 1R08)
R. Rodriguez, Senior Reactor Inspector (4OA5)

Accompanied by: S Schroer, NSPDP
W. Pursley, Health Physicist (in training)

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

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2011-003, 05000251/2011-003; 4/1/2011 – 6/30/2011; Turkey Point Nuclear Power Plant, Units 3 and 4; Equipment Alignment

The report covered a three month period of inspection by resident inspectors and region based inspectors. One Green NCV was identified. The significance of most findings is identified by their color (Green, White, Yellow, Red) using IMC 0609, "Significance Determination Process" (SDP), and any related cross-cutting aspects were determined using IMC 305, Operating Reactor Assessment Program. Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December, 2006.

A. NRC-Identified & Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. A self-revealing, non-cited violation (NCV) of Technical Specifications 6.8.1.a, Procedures, was identified when operators did not properly align the RHR system from shutdown cooling mode to injection mode. As a result, the 4A RHR pump was left running with no suction source causing a failure of the pump mechanical seal and minor flooding in the Unit 4, A RHR pump room. The pump was not available for either injection or shutdown cooling operations until the seal was replaced. The issue was documented in the corrective action program as AR 1644427 and a root cause investigation was initiated.

Failure to properly align the RHR system to the injection lineup was contrary to plant procedures and was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System Cornerstone and resulted in damage to an RHR pump. The finding was screened using IMC 0609, Appendix A, Phase 1, and because there was no loss of safety function with the alternate RHR pump remaining operable, the finding was determined to be of very low safety significance. The finding affected the cross-cutting area of Human Performance, Work Practices because personnel did not adequately implement error prevention techniques, such as pre-job briefings, self and peer checks, and proper documentation of activities (H.4(a))(1RO4).

B. Licensee Identified Violations

None.

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REPORT DETAILS

Summary of Plant Status:

Unit 3 operated at full power throughout the period.

Unit 4 started the period shutdown for Refueling Outage 26. On April 30 the reactor was critical. On May 5 prior to power escalation, the reactor was shut down to replace the 4A reactor coolant pump seal. The reactor was restarted on May 15 and entered Mode 1 on May 16. The unit returned to full power on May 20, 2011, and operated at full power for the rest of the period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection (02.01 Summer Readiness of Offsite and Alternate AC Power Systems, 02.02 Readiness for Extreme Weather Conditions, and 02.04 Readiness to Cope with External Flooding)

a. Inspection Scope

During the week of June 6, the inspectors reviewed and verified the status of licensee actions in preparation for hot weather and hurricane season. The inspectors reviewed licensee procedures 0-ONOP-103.3, Severe Weather Preparations. Licensee procedure 0-ADM-116, Hurricane Season Readiness, Section 4.1, Hurricane Season Preparation was verified completed. The inspectors walked down the Turkey Point flood protection barrier and verified the licensee had completed surveillance procedure 0-SMM-102.1, Flood Protection Stoplog and Penetration Seal Inspection, to assure that vulnerabilities had been identified and evaluated by the licensee. Licensee procedures 0-EPIP-20106, Natural Emergencies; and 0-EPIP-20101, Duties of Emergency Coordinator, were reviewed to assure that storm management plans could be implemented. Licensee procedure 0-ONOP-004.6, Degraded Switchyard Voltage, was reviewed and discussed with operators to assure that if switchyard voltage was outside of limits or could not be predicted (post-trip) appropriate communications would occur and actions would be taken. Licensee procedure 0-ADM-225, Online Risk Assessment and Management was reviewed to verify that appropriate actions were specified for risk management of degraded grid conditions. The inspectors performed site walk downs and tours of vulnerable areas (listed below) to verify that no activities would prevent the licensee from making timely storm preparations. The inspectors reviewed the Hurricane Season Preparation open items list and verified that the open exemptions were being documented in the corrective action program with a plan to correct them prior to a hurricane event.

On April 11, 2011, the inspector walked down the licensee's storage of sandbags, portable generators and pumps listed in the storm season inventory, 0-ADM-116, Hurricane Season Readiness. On June 15, 2011, the inspector accompanied licensee personnel in the switchyard and discussed storm preparedness with FPL transmission personnel. Areas specifically walked down included:

- Common Intake areas

Enclosure

- Switchyard
- Independent Spent Fuel Storage area

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted three partial alignment verifications of the safety-related systems listed below. These inspections included reviews using 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. The inspectors routinely verified that alignment issues were documented in the corrective action program.

- Unit 4, Walkdown of selected components for B train of residual heat removal when A RHR pump was removed for replacement of the mechanical seal. (AR 1644427)
- Unit 4: Walkdown of 4D bus aligned to 4A 4KV bus during check valve replacement on the 4A intake cooling water pump discharge. The walkdown was done using licensee procedure 4-NOP-005, 4KV buses A, B, D, Section 5.4.
- Unit 4: 4A emergency diesel generator and the station blackout cross-tie using 4-OP-023, Emergency Diesel Generator while 4B emergency diesel generator was removed from service for planned overhaul (WO 40015103-01 and 40014908-01)

b. Findings

Introduction: A Green, self-revealing non-cited violation (NCV) of Technical Specifications 6.8.1.a, Procedures, was identified when operators did not properly implement procedure, 4-OP-050, Residual Heat Removal (RHR) System. Specifically, operators failed to correctly align the operating A RHR pump flowpath allowing operation of the pump without any suction source, resulting in failure of the pump seal. The failed seal caused leakage and minor flooding in the 4A RHR pump room.

Description: On April 22, 2011, with Unit 4 in Mode 4 recovering from a refueling outage, operators were restoring the RHR system to its normal standby alignment (from shutdown cooling mode) using procedure 4-OP-050, Residual Heat Removal System, Section 6.1, Removing RHR from Cooldown Operation. The off-going operator had alternately operated each of the RHR pumps during RHR loop cooldown, and had left the 4A RHR pump running while he performed (and initialed) the next two steps in the procedure. The operator turned over the procedure to another operator at this point. The on-coming operator was tasked to complete the procedure but also was tasked to assist in surveillance testing on valves in the system. The surveillance testing was

briefed and the oncoming operator incorrectly resumed the RHR alignment at the next unsigned step. Since the preceding step was not completed, the 4A RHR pump continued to run.

With no suction pathway aligned and the 4A RHR pump running, a discharge path to the refueling water storage tank was opened. As a result, the pump operated with no flow in a depressurized system an estimated 18 minutes, until the operator noted the pump was running and stopped the pump. The issue was documented in a condition report and management was notified. The A RHR pump mechanical seal had been damaged and water ran into the RHR pump room, covering the floor of the room and draining into the room sump. The RHR room sump high level alarm was received in the control room. During this time, the B RHR pump remained available and technical specifications, which require one operable RHR pump in Mode 4, were satisfied.

The licensee evaluated the occurrence in a root cause evaluation. The licensee found that the RHR re-alignment procedure was continued by the second operator without a pre-job briefing or refocus brief after the operator gave attention to the planned valve testing. The licensee also found that the procedure was poorly written and procedure place keeping standards were not employed when the off-going operator signed subsequent steps with the RHR pump running. The root cause was determined to be operators allowing self-imposed production pressure to influence their decision making process resulting in a lapse in adherence to standards.

As corrective action, the training department was tasked to develop specific training to enforce standards of operation when many activities are occurring at the same time. Also, personnel were coached on the event and its causes; the procedure deficiencies were corrected; and the outage management organizational structure was revised to assure more supervisory oversight of control room activities.

Analysis: Failure to properly align the RHR system to the injection lineup was contrary to plant procedures and was a performance deficiency. The finding is more than minor because it is associated with the equipment performance attribute of the Mitigating System Cornerstone and resulted in damage to an RHR pump. The finding was screened using IMC 0609, Appendix A, Phase 1, and because there was no loss of safety function with the alternate RHR pump remaining operable, the finding was determined to be of very low safety significance. The finding affected the cross-cutting area of Human Performance, Work Practices because personnel did not adequately implement error prevention techniques, such as pre-job briefings, self and peer checks, and proper documentation of activities (H.4(a))(1RO4).

Enforcement: Turkey Point Technical Specification 6.8.1.a, states that written procedures required by the Quality Assurance Topical Report (QATR) shall be implemented. The QATR references the procedures in Appendix A of Regulatory Guide 1.33, Appendix A, which includes procedures for the shutdown cooling system (RHR). FPL implements this requirement in part with procedure 4-OP-50, Residual Heat Removal System, which directs the operator to stop the operating RHR pump prior to aligning the system for depressurization. Contrary to the above, on April 22, 2011, operators failed to stop the operating 4A RHR pump prior to proceeding with procedure steps to depressurize the RHR system, resulting in damage to the RHR pump seal. The

finding was self-revealing because leakage from the pump mechanical seal caused minor flooding and an RHR room sump alarm. When recognized by operators, the issue was entered into the corrective action program as AR 1644427 and a root cause evaluation was initiated. The pump seal was replaced. Because this violation was of very low safety significance and was entered into the licensee's corrective action program, this violation is being treated as an NCV, consistent with the NRC Enforcement Policy: NCV 05000250, 251/2011-003-01: Failure to properly perform a procedure results in damage to an RHR pump

1R05 Fire Protection

a. Inspection Scope

.1 Fire Area Walkdowns

The inspectors toured the following six plant areas to evaluate conditions related to control of transient combustibles and ignition sources and the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage and propagation. The inspectors reviewed these activities using provisions in the licensee's procedure 0-ADM-016, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists were routinely reviewed. In addition, the inspectors reviewed the condition report database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- Unit 3 4160V switchgear rooms
- Unit 4 4160V switchgear rooms
- Cable spreading room
- Unit 4 containment
- Unit 3 emergency diesel generator rooms
- Auxiliary building breezeway

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors conducted walkdowns of the following areas subject to internal flooding to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), Appendix 5F, Internal Plant Flooding that discussed protection of areas containing safety-related equipment that could be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, and control of debris. Operability of sump systems including alarms was verified completed under work orders

4003538901, 3902629801, 4003750404, and 4003672201. Manhole inspections were completed, including checking for accumulated water and cable integrity problems.

- Unit 3 Residual Heat Removal (RHR) Pump Rooms
- Unit 4 Residual Heat Removal (RHR) Pump Rooms
- Manholes 410, 430 (direct inspection)
- Manholes 319, 743 (review of records)

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (71111.08P)

From March 28, 2011, through April 1, 2011, the inspectors conducted a review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system, steam generator tubes, emergency feedwater systems, risk-significant piping and components and containment systems.

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

.1 Piping Systems ISI

a. Inspection Scope

The inspectors observed or reviewed records of the following non-destructive examinations mandated by the American Society of Mechanical Engineers (ASME) Code Section XI to evaluate compliance with the ASME Code Section XI and Section V requirements and, if any indications and defects were detected, to evaluate if they were dispositioned in accordance with the ASME Code or an NRC-approved alternative requirement.

- Liquid Penetrant examination for 3"-SI-2403-35 pipe to elbow weld, Class 2
- Liquid Penetrant examination for 3"-SI-2403-36 elbow to pipe weld, Class 2
- Ultrasonic examination for 3"-SI-2403-35 pipe to elbow weld, Class 2
- Ultrasonic examination for 3"-SI-2403-36 elbow to pipe weld, Class 2
- Magnetic Particle examination for 14"-MSA-2402-1, Class 2
- Radiographic examination for 14"-MSA-2402-1, Class 2
- General Visual examination for the containment liner plate

The inspectors reviewed the following examination records (volumetric or surface) with recordable indications that were analytically evaluated and accepted for continued service against the ASME Code Section XI or an NRC-approved alternative.

- CR 2008-26567, External Corrosion on Unit 4 CCW piping close 4-711B, ISO VLV for makeup water to CCW HDR B

The inspectors reviewed the following pressure boundary welds completed for risk-significant systems during the outage to evaluate if the licensee applied the preservice non-destructive examinations and acceptance criteria required by the construction Code, NRC-approved Code Case, NRC-approved Code relief request or the ASME Code Section XI. In addition, the inspectors reviewed the welding procedure specification and supporting weld procedure qualification records to evaluate if the weld procedures were qualified in accordance with the requirements of Construction Code and the ASME Code Section IX.

- Work Order 39023458-01, Replace degraded pipe between FCV-4-498 and CV-4-2902

b. Findings

No findings were identified.

.2 Reactor Pressure Vessel Upper Head Penetration Inspection Activities

a. Inspection Scope

For the Unit 4 vessel head, no examination was required pursuant to 10 CFR 50.55a(g)(6)(ii)(D) for the current refueling outage. The previous bare metal visual (BMV) examination for the vessel upper head was performed during the Fall 2009 refueling outage.

b. Findings

No findings were identified.

.3 Boric Acid Corrosion Control (BACC)

a. Inspection Scope

The inspectors performed an independent walkdown of portions of the borated systems which recently received a licensee boric acid walkdown and evaluated if the licensee's BACC visual examinations emphasized locations where boric acid leaks could cause degradation of safety-significant components.

The inspectors reviewed the following licensee evaluations of reactor coolant system components with boric acid deposits to evaluate if degraded components were documented in the corrective action system. The inspectors also evaluated the corrective actions for any degraded reactor coolant system components against the component ASME Code Section XI, and other licensee committed documents:

- CR 2010-8890, Wet boric acid at downstream threaded pipe cap
- CR 2010-1373, Wet BA at the packing
- CR 2010-1354, Moderate amount of brownish colored DBA at packing

The inspectors reviewed the following corrective actions related to evidence of boric acid leakage to evaluate if the corrective actions completed were consistent with the

requirements of the ASME Code Section XI and 10 CFR Part 50, Appendix B, Criterion XVI.

- CR 2009-33427, DBA from Swagelok fittings
- CR 2010-1354, Minor DBA at packing
- CR 2010-1354, Minor DBA on gasket between flanges

b. Findings

No findings were identified.

.4 Steam Generator (SG) Tube Inspection Activities

a. Inspection Scope

For the Unit 4 SGs, no ECT examinations were required pursuant to the Technical Specifications during the current refueling outage. However, the inspectors evaluated the licensee's review of the Degradation Assessment from the previous outage to ensure that it supported a skip cycle for the Unit 4 SGs.

b. Findings

No findings were identified.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors performed a review of ISI/SG related problems entered into the licensee's corrective action program and conducted interviews with licensee staff to determine if;

- the licensee had established an appropriate threshold for identifying ISI/SG related problems;
- the licensee had performed a root cause (if applicable) and taken appropriate corrective actions; and
- the licensee had evaluated operating experience and industry generic issues related to ISI and pressure boundary integrity.

The inspectors performed these reviews to evaluate compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The corrective action documents reviewed by the inspectors are listed in the Attachment to this report.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program.1 Resident Inspector Quarterly Review: Operating Experience Smart Sample FY 2010-02a. Inspection Scope

On June 27, 2011, the inspectors observed and assessed licensed operator performance in the plant specific simulator. The unannounced simulated events were done using FPL Training Evaluation Scenario Number 750207605; Auto Rod Insertion/Loss of 3B 4KV Bus, Pressurizer Safety Fails Open. The simulated events included operator response to a reactivity transient, manual initiation of high head safety injection, recognition and mitigation of a loss of subcooling event, and prescribed actions to assure protection of safety related pumps. Operators responded to the events using off-normal procedure 3-ONOP-028, Reactor Control System Malfunction; and plant emergency procedures 3-EOP-E-0, Reactor Trip Safety Injection; 3-EOP-E-1, Loss of Reactor or Secondary Coolant; and 3-EOP-F-0, Critical Safety Function Status Tree.

Event classification (Alert) was checked for proper classification and simulated state notification in accordance with licensee procedures EPIP-20101, Emergency Action Level Classification Tables; and 0-EPIP-20134, Offsite Notifications and Protective Action Recommendations. The simulator board configurations were compared with actual plant control board configurations concerning recent plant modifications. The inspectors specifically evaluated the following attributes related to operating crew performance and the licensee evaluation:

- 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 off-normal and emergency operating 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 and emergency plan classification and notification
- Crew overall performance and interactions
- Evaluator's critique and findings

In addition the inspectors reviewed and used Operating Experience Smart Sample FY 2010-02 to assess the licensee's training activities related to the following:

- Minimum shift manning
- Use of licensed operators outside of their normal roles, including unit supervisors serving as reactor operator
- Training scenarios involving fires
- Multiple failures and complex scenarios
- Concurrent use of multiple procedures

b. Findings

No findings were identified.

Enclosure

1R12 Maintenance Effectivenessa. Inspection Scope

The inspectors reviewed the following two equipment problems and associated condition reports 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 0-ADM-728, Maintenance Rule Implementation. The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of a(1) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some corrective maintenance activities. The inspectors verified that equipment problems were being identified and entered into the corrective action program. The inspectors used the licensee's maintenance rule data base, system health reports, and the corrective action program as sources of information on tracking and resolution of issues.

- Monitoring of Unit 3 and unit 4 boric acid transfer pumps under 10 CFR 50.65(a)(2). The system health report for System 46, first quarter 2011, was reviewed as part of the inspection.
- Monitoring of containment purge supply and exhaust valves under 10 CFR 50.65(a)(1). Local leak rate tests, and the system health report for System 5, first quarter 2011, were reviewed as part of the inspection. POV-4-2600 was removed from, and subsequently placed back into, (a)(1) status and AR 1645554 was written to prepare a plan for return to (a)(2).

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Controla. Inspection Scope

The inspectors completed review and inspection of the licensee's risk assessment of six emergent or planned maintenance activities. The verification was done using the licensee's risk assessment and risk management activities, evaluated using the requirements of 10 CFR 50.65(a)(4); and licensee Procedures 0-ADM-068, Work Week Management and O-ADM-225, On Line Risk Assessment and Management. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment and the licensee assessment of aggregate risk using FPL procedure OP-AA-104-1007, Online Aggregate Risk. The inspectors evaluated the following conditions, which included risk assessments and risk management activities:

- April 10: Unit 3 risk with Unit 4 condensate storage tank and refueling water storage tank out of service for internal inspections

- April 11: Unit 3 risk when 3A emergency diesel generator was out of service after fuel oil overflowed the skid tank. Switchyard activities were checked to assure medium switchyard risk.
- April 25: Unit 4 risk in Mode 4 during preparations to transition to Mode 3. Condensate pumps and auxiliary feedwater were not available. 4A Residual heat removal pump had failed (AR 1644427)
- May 10: Unit 3 risk with B auxiliary feedwater pump removed from service for troubleshooting a faulty governor (Work Order 40048977-03) and B standby steam generator feedwater pump removed from service for preventive maintenance (ECO 0-10-12-017)
- June 2: Unit 3 risk management when flow control valve FCV-3-113A was removed from service for planned maintenance and high head safety injection cross-tie valve MOV-3-878A was removed from service for preventive maintenance. The risk management included prevention of intake cooling water basket strainer backwash because of the potential risk increase.
- June 29: Unit 4 risk management with the startup transformer out of service for planned maintenance per work order 40040072-02

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

For the three operability evaluations described in the condition reports (CR) listed below, the inspectors evaluated the technical adequacy of licensee evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the final safety analysis report to verify that the system or component remained available to perform its intended function. In addition, when applicable, the inspectors reviewed compensatory measures implemented to verify that the plant design basis was being maintained. The inspectors also reviewed a sampling of condition reports to verify that the licensee was identifying and correcting any deficiencies associated with operability evaluations.

- AR 1641503 Operability Assessment for Unit 3 Rod Deviation Monitor
- AR 1649405 Operability of the fire protection header following fire system pipe failure on Units 1 and 2
- AR 1649616 Operability of Unit 3 High Head Safety Injection System when Unit 4 valves 4-836A and 4-836B were in the locked open position

b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the six post maintenance tests listed below, the inspectors reviewed the test procedures and either witnessed the testing and/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 operable. The inspectors used licensee procedure 0-ADM-737, Post Maintenance Testing, in their assessments.

- Unit 3: Stroke open and closed verification for solenoid valve SV-3-3522 and level switch test using work order 40080252-01, EDG 3A Fuel Oil Skid Tank Inlet Solenoid Valve troubleshooting and replacement. Drawings 5613-M-3022 and 5613-M-16-69, Sheet 2A were used in the verifications.
- Unit 4: Air operated valve diagnostics following overhaul, including stem and plug replacement of FCV-4-498 under work order 40077560-01. Diagnostics were completed using work order 40016722-01, Main Feedwater System Tests using 4-PMI-074.1; and operability was determined using 4-OSP-074.5, Feedwater Valve and Bypass Valve Inservice Test
- Unit 4: Various installation tests conducted on replaced auxiliary transformer under PC/M 09-101 including winding resistance checks, dole testing, fan functional testing, protective relay functional, and phase differential relay testing
- Unit 4: 4-OSP-050.2, Residual Heat Removal System Inservice Test, section 7.1, for 4A RHR pump after completion of work order 40014917 following seal replacement
- Unit 4: Leak check using 4-OSP-051.5, Local Leak Rate Tests, penetration 42 following replacement of the stem and plug for containment isolation valve CV-4-855 under work order 40078034-04 Repair CV-4-855. Stroke testing was also completed within the same work package.
- Unit 3 and 4: Operation of A standby steam generator feedwater pump using 0-OSP-074.3, Standby Steam Generator Feedwater Pumps Availability Test, Section 4.2, following preventive maintenance per work order 40046319-01 (ECO 0-10-12-017)

b. Findings

No findings were identified.

1R20 Unit 4 Refueling Outage 26a. Inspection Scope

The inspectors observed selected Unit 4 outage activities to determine whether shutdown safety functions were properly maintained as required by technical specifications and plant procedures. The inspectors evaluated specific performance attributes including operator performance, communications, and risk management. The inspectors reviewed procedures and observed selected activities associated with the outage and conducted walkdowns of systems credited to maintain safety margins and defense in depth. The inspectors verified that activities were performed in accordance with the outage plan, plant procedures, and as appropriate, verified that acceptance

criteria were met. Conditions adverse to quality were verified documented by the licensee in the corrective action program. Also, management activities were monitored to assure adherence to the outage plan and safe resolution of issues. The inspectors specifically evaluated the following activities:

- Pre-outage shutdown safety plan using licensee procedure 0-ADM-051, Outage Risk Assessment and Control
- Initial containment inspections and ability of the licensee to close containment if needed within specified times during reactor coolant system draining
- Coordination of component and system outages to assure defense in depth using licensee procedure 0-ADM-051, Outage Risk Assessment and Control
- Outage issues were documented in the corrective actions program
- Monitoring of decay heat removal system performance, lineups, and cooldown rates. The inspectors verified that the plant cooldown was conducted in accordance with licensee procedure 4-OSP-041.7, Reactor Coolant System Heatup and Cooldown Temperature Verification
- Fuel handling activities including selected observations of core offload and reload
- Equipment clearance activities including ECO 4-10-04-014 sections Zone 41-08 Rev1, Maintenance on Pressurizer PORV PCV-4-455C; containment penetration 36 local leak rate test, As Left, for Containment Purge Exhaust; and penetration 34 local leak rate test, As Found, local leak rate test for Service Air
- Reactor coolant system drain and operations with a short time to boil including verification of alternate electrical supplies and both trains protected
- Final containment inspection with checks of sump system operational lineup
- Restart readiness and evaluation of open items by the outage management team
- Reactor plant heatup and startup, power ascension, including observations of licensee procedure 4-GOP-503, Cold Shutdown to Hot Standby

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following seven surveillance tests to verify that the tests met the technical specification requirements, the UFSAR, and the licensee's procedural requirements and demonstrated that the systems were operationally ready to perform their intended safety functions. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the positions/status required for the system to perform its safety function. The inservice testing (IST) was validated using the licensee's Inservice Testing Program Fourth Ten Year Interval, dated March 11, 2004. The inspectors also verified two containment isolation valve leak tests during the Unit 4 outage (CIV). The inspectors verified that surveillance issues were documented in the corrective action program.

- 3-OSP-050.2, Residual Heat Removal System Inservice Test, section 7.3, Residual Heat Removal Pump 3B Group A Test- Standby Alignment (IST)
- 3-OSP-200.3, Secondary Plant Periodic Tests, Main Turbine Trips Test and Condenser Low Vacuum Alarm, Low Vacuum Trip Functional Tests
- 3-OSP-075.6, Auxiliary Feedwater Train 1 Backup Nitrogen Test
- 3-OSP-023.1, Diesel Generator Operability Test
- 0-OSP-075.12, Auxiliary Feedwater Valve Manual Test, Section 4.9 Unit 4 Flow Control Valve Local Cycling
- 4-OSP-051.5, Local Leak Rate Tests Penetrations, P-34 Service Air
- 4-OSP-051.5, Local Leak Rate Tests Penetrations, P-36 Containment Purge Exhaust, (CIV)

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 and discussed labeling of radioactive material and/or containers; and postings for radiation areas, high radiation area (HRA), locked-high radiation area (LHRA) and Very High Radiation Area (VHRA) locations in RCA locations of the Unit 4 (U4) Reactor Containment Building (RCB), Unit 3 (U3) and U4 Reactor Auxiliary Building (RAB), Radioactive Waste Building (RWB) processing area, dry storage warehouse, and outside equipment and material storage locations. The inspectors conducted or directly observed Health Physics Technician (HPT) staff conduct independent licensee radiation surveys of equipment and areas within the U4 RCB, U3 and U4 RABs, RWB, and dry storage warehouse, and outside equipment/storage locations. The inspectors reviewed, evaluated, and discussed pre-job and current survey records for selected plant areas, equipment, and selected tasks including monitoring for alpha emitters, hot particles, airborne radioactivity; and monitoring for tasks involving steep dose rate gradients. The inspectors also discussed changes to plant operations, and shut-down and chemical cleanup operations that could contribute to changing radiological conditions. Impact of shielding effort for selected equipment was evaluated. For selected U4 Refueling Outage Cycle 26 (4R26) activities, the inspectors attended pre-job briefings and reviewed radiation work permit (RWP) details to assess communication of radiation control requirements and current radiological conditions to workers. Results of recent dose rate, contamination, and airborne monitoring surveys were reviewed for selected areas and equipment within the U4 RCB, U3 and U4 RABs, dry storage warehouse, and outside storage locations. Specifically, the inspectors reviewed implementation and discussed results of monitoring for alpha and discrete radioactive particles for the licensee staff's entries into the lower cavity area.

Hazard Control and Work Practices: The inspectors evaluated access barrier effectiveness for selected HRA, LHRA, and VHRA locations within the U4 RCB, U3 and U4 RAB, Radioactive Waste Building, and Dry Storage Warehouse. Status of procedural guidance for LHRA and VHRA controls were discussed with HPTs and supervisors. Established radiological controls for both external and internal exposure were evaluated for selected 4R26 tasks including shut-down/crud burst chemistry activities, reactor head set, cavity decontamination (decon), seal-table maintenance, and fuel movement.

Occupational workers' adherence to selected RWP and HPT proficiency in providing job coverage were evaluated through direct and remote observations, and through interviews with licensee staff. Electronic Dosimeter (ED) alarm set points and worker stay times were evaluated against area radiation survey results for LHRA activities associated with 4R26 activities. ED alarm logs were reviewed and worker responses to dose and dose rate alarms during selected work activities were evaluated.

Control of Radioactive Material: The inspectors observed surveys of material and personnel being released from the RCA control point using Small Article Monitor (SAM), Personnel Contamination Monitor (PCM), and portal monitor (PM) instrumentation. The inspectors discussed equipment sensitivity, alarm set-points, and release program guidance with licensee staff. In addition, the inspector reviewed controls for hand surveying large tools and equipment for release from the outside RCA and the Protected Area (PA). The inspectors compared recent 10 Code of Federal Regulations (CFR) Part 61 results for the Dry Active Waste (DAW) radioactive waste stream with calibration source radionuclides 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, as applicable, with licensee staff.

Problem Identification and Resolution: Condition Reports (CR) associated with radiological hazard assessment and control were reviewed and assessed. 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, Rev. 10 and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radiation protection (RP) activities were evaluated against the requirements of Updated Final Safety Analysis Report (UFSAR) Section 12; Technical Specifications (TS) Sections 6.8 Procedures and Programs, and 6.12, HRA; 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 Section 2RS1 and 4OA1 of the report Attachment.

The inspectors completed all specified line-items detailed in Inspection Procedure (IP) 71124.01 (Sample size of 1).

b. Findings

No findings were identified.

2RS2 As Low As Reasonably Achievable (ALARA)

a. Inspection Scope

ALARA Program Status: The inspectors reviewed and discussed plant exposure history and current trends including the site's three-year rolling average (TYRA) collective exposure history for calendar year (CY) 2007 through CY 2009. Current and proposed activities to manage site collective exposure and trends regarding collective exposure were evaluated through review of previous TYRA collective exposure data and review of the licensee's 5-year ALARA program implementing plan. Current ALARA program guidance and recent changes, as applicable, regarding estimating and tracking exposure were discussed and evaluated.

Radiological Work Planning: The inspectors reviewed planned work activities and their collective exposure estimates for 4R26. Work activities, exposure estimates and mitigation activities were reviewed for the following high collective exposure tasks: reactor head disassembly and re-assembly; U4 containment scaffold installation and removal; seal table activities; and fuel movement activities. For the selected tasks, the inspectors reviewed dose mitigation actions and established dose goals. During the inspection, use of remote technologies including teledosimetry and remote visual monitoring were reviewed as specified in RWP or procedural guidance. Current collective dose data for selected tasks were compared with established estimates and, where applicable, changes to established estimates were discussed with responsible licensee ALARA planning representatives. The inspectors reviewed previous post-job reviews conducted for the 4R26 and determined that the items were entered into the licensee's corrective action program for evaluation.

Verification of Dose Estimates and Exposure Tracking Systems: The inspectors reviewed select ALARA work packages and discussed assumptions with responsible planning personal regarding the bases for the current estimates. The licensee's on-line RWP cumulative dose data bases used to track and trend current personal and cumulative exposure data and/or to trigger additional ALARA planning activities in accordance with current procedures were reviewed and discussed. Selected 4R26 work-in-progress reviews and adjustments to cumulative exposure estimate data were evaluated against work scope changes or unanticipated elevated dose rates.

Source Term Reduction and Control: The inspectors reviewed historical dose rate trends for shutdown chemistry, cleanup, and resultant chemistry and radiation protection trend-point data against the current 4R26 data.

Problem Identification and Resolution: The inspectors reviewed and discussed selected CRs associated with ALARA program implementation. The reviewed items included CRs, self-assessments, and quality assurance audit documents. The inspectors evaluated the licensee's ability to identify, characterize, prioritize, and resolve the identified issues in accordance with licensee procedures PI-AA-204, Condition

Identification and Screening Process, Rev. 10 and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10.

The licensee's ALARA program activities and results were evaluated against the requirements of UFSAR Section 12; TS Sections 6.8 Procedures and Programs, and 6.12, HRA; 10 CFR Parts 19 and 20; and approved licensee procedures. Records reviewed are listed in Sections 2RS1 and 2RS2 of the report Attachment.

Radiation worker performance was reviewed as part of observations conducted for IP 71124.01 and is documented in section 2RS1. The inspectors completed all specified line-items detailed in IP 71124.02 (sample size of 1).

b. Findings

No findings were identified.

2RS3 In-Plant Airborne Radioactivity Control and Mitigation

a. Inspection Scope

Engineering Controls: Licensee engineering controls used to control and mitigate airborne radioactivity were reviewed and discussed. The inspectors evaluated selected 4R26 engineering controls including operation of the U4 RB purge, U3 and U4 RAB and Spent Fuel Pool (SFP) ventilation systems, and temporary HEPA filtration systems for selected tasks and refueling operations with the potential for generating airborne activity conditions. The evaluations included procedural guidance, operability testing, and established configurations during specific outage tasks. In addition, plant guidance and its implementation for the monitoring of potential airborne beta-gamma and alpha-emitting radionuclides for on-going outage tasks including pressurizer and seal table maintenance activities were reviewed and discussed with licensee representatives.

Use of Respiratory Protection Devices: Program guidance for issuance and use of respiratory protection devices were reviewed and discussed with responsible licensee representatives. The inspectors reviewed TEDE-ALARA evaluations conducted for select 4R26 outage tasks with an emphasis on sump and seal table maintenance activities. Selected whole-body count routine and investigative (WBC) analysis results for occupational workers were discussed and evaluated. Use of respiratory protective equipment was evaluated for selected workers involved in 4R26 outage activities. The inspectors toured selected onsite compressors available for supplying breathing air for current outage activities and reviewed Grade D or greater air certification for permanent and temporary on-site compressors used for supplied-line breathing air and SCBA bottle fill-station activities. Training, fit testing, and medical qualifications for selected RP, maintenance, operations staff for using respiratory protection activities for outage activities were reviewed and discussed with cognizant licensee representatives.

Self-Contained Breathing Apparatus (SCBA) for Emergency Use: The inspectors reviewed current status, operability and availability of select respiratory and SCBA equipment maintained within the Operations Support Center, B5B lockers, U3 and U4 control rooms, and U3 and U4 RAB locations. Maintenance activities for selected

respiratory protective equipment, e.g., compressed gas cylinders, regulators, valves, and hose couplings, by certified HPTs/ vendor technicians was reviewed for selected SCBA units. Training, fit testing, and medical qualifications for selected RP, maintenance, and operations staff assigned ERO duties were reviewed and discussed with cognizant licensee representatives. For selected U3 and U4 control room operators, the inspectors discussed and reviewed annual hands-on SCBA training activities including donning, doffing and functionally checking SCBA equipment, and reviewed availability of corrective lens, as applicable, for on-shift personnel.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) documents within the area of radiological airborne controls and respiratory protection activities. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with Performance Improvement Procedure PI-AA-204, Condition Identification and Screening Process, Rev. 10, and PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Specific licensee CAP documents reviewed for airborne radionuclide concentration monitoring and mitigation are listed in Section 2RS3 of the report Attachment.

RP program activities associated with airborne radioactivity monitoring and controls were evaluated against details and requirements documented in the UFSAR Sections 11 and 12; TS Section 3/4.9.9, Containment Ventilation System, 3/4.9.13, Radiation Monitoring, and 6.8.1, Procedures and Programs; 10 CFR Part 20; and approved licensee procedures. Documents reviewed are listed in Section 2RS3 of the report Attachment.

b. Findings

No findings were identified.

The inspectors completed all specified line-items detailed in IP 71124.03 (sample size of 1).

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

a. Inspection Scope

Waste Characterization and Classification: During inspector walk-downs, accessible sections of the liquid and solid radioactive waste (radwaste) processing systems were assessed for material condition and conformance with system design diagrams. Inspected equipment included radwaste storage tanks, resin transfer piping, and resin and filter packaging components. The inspectors discussed component function, processing system changes, and radwaste program implementation with licensee staff.

The 2010 Effluent Report and radionuclide characterizations from 2009 - 2010 for each major waste stream were reviewed and discussed with radwaste staff. For primary resin, reactor coolant system filters, and DAW 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. The inspectors also reviewed the licensee's procedural guidance for monitoring changes in waste stream isotopic mixtures.

Radwaste processing activities and equipment configuration were reviewed for compliance with the licensee's Process Control Program (PCP) and FSAR, Chapter 11. 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). Reviewed documents are listed in Section 2RS8 of the report Attachment.

Radioactive Material Storage: During walk-downs of radioactive material 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. Inspectors discussed the impact of long-term storage with the licensee.

Radioactive material and waste storage activities were reviewed against the requirements of 10 CFR Part 20. Reviewed documents are listed in Section 2RS8 of the report Attachment.

Transportation: The inspectors directly observed loading for transport activities for a DAW shipment. The inspectors noted package markings and labeling, performed independent dose rate measurements, and interviewed shipping technicians regarding Department of Transportation (DOT) regulations.

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, radiation survey results, and evaluated whether receiving licensees were authorized to accept the packages. Licensee procedures for opening and closing Type A shipping containers were compared to manufacturer requirements. In addition, training records for selected individuals currently qualified to ship radioactive material were reviewed.

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 Section 2RS8 of the report Attachment.

Problem Identification and Resolution: The inspectors reviewed CRs in the area of radwaste/shipping. The inspectors evaluated the licensee's ability to identify and resolve the issues in accordance with procedure 0-ADM-533, "Corrective Action Program Guidance and Performance Assessment and Trending Analysis", Rev. 8. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results. Licensee CAP documents reviewed are listed in Section 2RS8 of the report Attachment.

The inspectors completed all specified line-items detailed in IP 71124.08 (sample size of 1).

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4A01 Performance Indicator Verification

.1 Inspection Scope: Barrier Integrity Cornerstone

a. Inspection Scope

The inspectors checked licensee submittals for the two performance indicators (PIs) listed below for Unit 3 and Unit 4 for the period January 1, 2010, through March 31, 2011, to verify the accuracy of the PI data reported per licensee procedure 0-ADM-032, NRC Performance Indicators, Turkey Point, attachments 12 and 13. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 5, were used to check the reporting for each data element. The inspector reviewed operator logs and chemistry department analysis data (0-NCSP-002, Radiochemistry Documentation) to verify that the licensee had identified and reported the proper values for reactor activity and leakage, as applicable. In addition, the inspectors observed chemistry personnel obtain and analyze primary coolant samples from Unit 3 per procedure 0-NCZP-046.4, Obtaining a Reactor Coolant Demineralizer Sample, and 0-NCAP-205, Reactor Coolant Activity Analysis. The inspectors checked that deficiencies that could affect the licensee's performance indicator program were entered into the corrective action program.

- Reactor Coolant System Specific Activity
- Reactor Coolant System Leakage (reviewed ¾-OSP-041.1, Reactor Coolant System Leakage)

b. Findings

No findings of significance were identified.

.2 Occupational Radiation Safety Cornerstone

a. Inspection Scope

The inspectors reviewed PI data collected from July 1, 2010, through March 31, 2011, for the Occupational Exposure Control Effectiveness PI. For the reviewed period, the inspectors assessed CAP records to determine whether HRA, VHRA, or unplanned exposures, resulting in TS or 10 CFR 20 non-conformances, had occurred during the review period. In addition, the inspectors reviewed selected personnel contamination event data, internal dose assessment results, and ED alarms for cumulative doses and/or dose rates exceeding established set-points. The reviewed documents relative to this PI are listed in Section 4OA1 of the Attachment.

b. Findings

No findings of significance were identified.

.3 Public Radiation Safety Cornerstone

a. Inspection Scope

The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from July 1, 2010, through March 31, 2011. For the assessment period, the inspectors reviewed cumulative and projected doses to the public and CR documents related to Radiological Effluent Technical Specifications/Offsite Dose Calculation Manual issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in section 4OA1 of the Attachment.

b. Findings

No findings of significance were identified.

The inspectors completed all of the specified line-item samples associated with the OS and PS Cornerstones detailed in IP 71151 (sample size of 2).

4OA2 Problem Identification and Resolution

.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 corrective action program. This review was accomplished by reviewing daily summaries of condition reports and by reviewing the licensee's electronic condition report database. Additionally, a 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 Review

a. Inspection Scope

The inspectors selected the following two condition reports for detailed review and discussion with the licensee. The condition reports were reviewed to ensure that an appropriate evaluation was performed and appropriate corrective actions were specified and prioritized. Other attributes checked included disposition of operability and

resolution of the problem including cause determination and corrective actions. The inspectors evaluated the condition reports in accordance with the requirements of the licensee's corrective actions process as specified in licensee procedures PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action.

- CR 1644427, Root Cause Evaluation: Inadvertent venting and cavitation of 4A residual heat removal pump
- CR 0592192, Apparent Cause Evaluation: 3B Intake cooling water pump is inoperable due to a damaged upper oil reservoir sample port

b. Findings

No findings of significance were identified with the licensee's root cause evaluation of the occurrence. Enforcement associated with CR 1644427 can be found in Section 1RO4

.3 Semi-Annual Trend Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors reviewed the licensee's corrective action program and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector corrective actions item screening discussed in section 4OA2.1 above, plant status reviews, plant tours, document reviews, and licensee trending efforts. Documents reviewed included Turkey Point Station Performance Improvement Health Report, 1st Quarter 2011, and the Nuclear Safety Culture Turkey Point Site Dashboard, dated April 2011. The inspectors' review nominally considered the six month period of January through June 2011. Corrective actions associated with a sample of the issues identified in the licensee's corrective action program were reviewed for adequacy.

b. Assessment and Observations

No findings of significance were identified. The licensee continued to develop a Nuclear Safety Culture Dashboard to allow management oversight of indicators that could reflect the health of the workplace safety conscious work environment.

4OA5 Other Activities

.1 (Closed) NRC Temporary Instruction (TI) 2515/177, "Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter (GL) 2008-01)"

a. Inspection Scope

The inspectors reviewed the implementation of the licensee's actions in response to GL 2008-01, Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems. The subject systems included the emergency core cooling system (ECCS – high head safety injection, low head safety injection), residual heat removal system (RHR), and containment spray system (CS).

The following areas were reviewed during the inspection:

- The licensing basis of the facility to verify that actions to address gas accumulation were consistent with the operability requirements of the subject systems
- The design of the subject systems to verify that actions taken to address gas accumulation were appropriate given the specifics of the functions, configurations, and capabilities of these systems
- The design and operation of the RHR system to determine if flashing in RHR suction lines would challenge system operability
- Selected analyses performed by the licensee to verify that methodologies for predicting gas void accumulation, movement, and impact were appropriate
- Performed walkdowns of selected subject systems to verify that the reviews and design verifications conducted by the licensee had drawn appropriate conclusions with respect to piping configurations and pipe slope which could result in gas accumulation susceptibility.
- Testing implemented by the licensee to address gas accumulation in subject systems. A selection of test procedures and completed test results were reviewed to verify that test procedures were appropriate to detect gas accumulations that could challenge subject systems.
- The specified testing frequencies to verify that the testing intervals had appropriately taken historical gas accumulation events as well as susceptibility to gas accumulation into account
- The test programs and processes to verify that they were sensitive to pre-cursors to gas accumulation
- The corrective actions associated with gas accumulation in subject systems to verify that identified issues were being appropriately identified and corrected. This review included modifications made to the plant including the installation of additional vent valves
- The locations of selected vent valve installations to verify that the locations selected were appropriate based on piping configuration and pipe slopes

b. Findings and Observations

No findings were identified.

The team noted that the licensee relied, in part, on GOTHIC computer models to evaluate the potential for accumulated gas void transport in systems subject to GL 2008-01 evaluation. These computer models and associated engineering analyses were used to establish bases for void size acceptance criteria. Use of the computer modeling was supported, in part, by empirical test data referenced in WCAP-16631-NP, "Testing and Evaluation of Gas Transport to the Suction of ECCS Pumps." The team discussed these observations with NRR regarding the use of GOTHIC to predict void transport behavior and noted that the validation of computer codes used to determine void size acceptance criteria was currently under evaluation by the NRC to: (1) better understand the acceptability of the application of the test results contained in WCAP-16631 concerning void assessment analysis and (2) assess any potential generic implications (reference ML103020246). The team also noted that the licensee had entered this issue into their corrective action program as AR 1606974. The team reviewed the corrective actions associated with AR 1606974. The licensee maintains an open action item to track future development of guidance regarding the use of GOTHIC to determine void size acceptance criteria and to evaluate any potential changes to the licensee's gas accumulation management program required as a result of those evaluations and communications.

.2 (Closed) NRC Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event"

a. Inspection Scope

The inspectors assessed the activities and actions taken by the licensee to assess its readiness to respond to an event similar to the Fukushima Daiichi nuclear plant fuel damage event. This included: (1) an assessment of the licensee's capability to mitigate conditions that may result from beyond design basis events, with a particular emphasis on strategies related to the spent fuel pool, as required by NRC Security Order Section B.5.b issued February 25, 2002, as committed to in severe accident management guidelines, and as required by 10 CFR 50.54(hh); (2) an assessment of the licensee's capability to mitigate station blackout (SBO) conditions, as required by 10 CFR 50.63 and station design bases; (3) an assessment of the licensee's capability to mitigate internal and external flooding events, as required by station design bases; and (4) an assessment of the thoroughness of the walkdowns and inspections of important equipment needed to mitigate fire and flood events, which were performed by the licensee to identify any potential loss of function of this equipment during seismic events possible for the site.

b. Findings

Inspection Report 05000250/2011010, 05000251/2011010 (ML111330163) documented detailed results of this inspection activity. Following issuance of the report, the inspectors conducted detailed followup on selected issues. No findings were identified during this followup inspection.

.3 (Closed) NRC Temporary Instruction 2515/184, "Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs)"

On May 27, 2011, the inspectors completed a review of the licensee's severe accident management guidelines (SAMGs), implemented as a voluntary industry initiative in the 1990s to determine: (1) whether the SAMGs were available and updated; (2) whether the licensee had procedures and processes in place to control and update its SAMGs; (3) the nature and extent of the licensee's training of personnel on the use of SAMGs; and, (4) licensee personnel's familiarity with SAMG implementation.

The results of this review were provided to the NRC task force chartered by the Executive Director for Operations to conduct a near-term evaluation of the need for agency actions following the Fukushima Daiichi fuel damage event in Japan. Plant-specific results for Turkey Point Nuclear Plant were provided as an Enclosure to a memorandum to the Chief, Reactor Inspection Branch, Division of Inspection and Regional Support, dated June 2, 2011 (ML111530328).

.4 (Closed) Unresolved Item (URI) 05000250,251/2005010-02, Unapproved Local Manual Operator Actions for Post-Fire Safe Shutdown.

On March 26, 2004, the NRC issued inspection report 05000250,251/2004007, which identified several unresolved items (URIs) involving ineffective fire response procedures, and the use of unapproved operator manual actions in lieu of meeting the physical protection requirements of 10 CFR Part 50, Appendix R, Section III.G.2. These 2004 URIs were subsequently closed in NRC inspection report 5000250,251/2005010, dated October 7, 2005, and apparent violation (AV) 05000250,251/2005010-01 was issued.

In response to these issues, the licensee took immediate compensatory actions (some of which included the implementation of local operator manual actions) to reduce the risk. The NRC opened URI 05000250,251/2005010-02, to review these compensatory measures.

On November 15, 2005, FPL submitted a letter to the NRC documenting its intent to adopt the risk-informed, performance-based fire protection approaches in National Fire Protection Association (NFPA) Standard 805, "Performance-Based Standard for Fire Protection for Light Water Reactor Electric Generating Plants," 2001 Edition under 10 CFR 50.48(c). Therefore, these compensatory measures, in the form of local operator manual actions, are being tracked by the licensee as part of the NFPA 805 transition process and are required to be in place until compliance is either restored to 10 CFR 50.48(b) or achieved per 10 CFR 50.48(c).

In NRC inspection report number 05000250,251/2005013, the NRC concluded that the licensee had incorporated acceptable local operator manual actions as compensatory measures, and granted enforcement discretion for AV 05000250,251/2005010-01. The inspectors have verified that these compensatory measures are still in place. Therefore, URI 05000250,251/2005010-02 is closed.

4OA6 Meetings, including Exit

The resident inspectors presented the inspection results to Mr. Kiley and other members of licensee management on July 14, 2011. 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

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

N. Bach, Outage Manager
C. Cashwell, Radiation Protection Manager
R. Coffey, Maintenance Manager
M. Crosby, Quality Manager
J. Garcia, Engineering Manager
B. Carberry, Emergency Preparedness Manager
J. Danek, Radiation Protection
M. Kiley, Site Vice-President
J. Patterson, Fire Protection Supervisor
E. McCartney, Plant General Manager
R. Tomonto, Licensing Manager
B. Scott, Chemistry Manager (Acting)
S. Shafer, Assistant Operations Manager
R. Wright, Operations Manager

NRC personnel:

L. Wert, Director, Division of Reactor Projects
D. Rich, Chief, Reactor Projects Branch 3
M. Ernstes, Chief, Security and Safeguards Branch, DRS

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000250, 251/2011-003-01 NCV Failure to properly perform a procedure results in damage to an RHR pump

Closed

05000250,251/2005010-02 URI Unapproved Local Manual Operator Actions for Post-Fire Safe Shutdown.

05000250, 251/2515/177 TI Managing Gas Accumulation in Emergency Core Cooling, Decay Heat Removal, and Containment Spray Systems (NRC Generic Letter (GL) 2008-01)

05000250,251/2515/183 TI Follow-up to the Fukushima Daiichi Nuclear Station Fuel Damage Event (Section 4A05.2)

05000250/251/2515/184 TI Availability and Readiness Inspection of Severe Accident Management Guidelines (SAMGs) (Section 4A05.3)

LIST OF DOCUMENTS REVIEWED

Procedures

0-ADM-537, Boric Acid Corrosion Control Program, Revision 2
0-OSP-041.26, Containment Visual Leak Inspection, Revision 4
0-OSP-041.26, Containment Visual Leak Inspection, Revision 4
4-OSP-045.1, ASME Section XI Quality Group A Bolting Examination, Revision 0
NDE 2.2, Magnetic Particle Examination, Revision 14
NDE 3.3, Liquid Penetrant Examination Solvent Removable Visible Dye Technique, Revision 11
NDE 4.7, Visual Examination of Reactor Building Containment Vessel General Visual/Detailed Visual (VT-1)/VT-3, Revision 4
NDE 5.4, Ultrasonic Examination of Austenitic Piping Welds, Revision 19
NDE 6.3, Radiographic Examination General Requirements, Revision 1

Corrective Action Documents

00575441
01635020
01635218
01635529
01635821
01664492
2008-26567
2008-31043
2009-19932
2009-33427
2009-7802
2009-7854
2010-1354
2010-1373
2010-2246
2010-5231
2010-8890

Drawings

5614-P-562-S Sheet 2
5614-P-571-S Sheet 1
5614-P-770-S Sheet 1

Other

4th Interval ISI-PTN-3/4-Program Plan, Revision 3
4th Interval ISI-PTN-4-Schedule, Revision 3
APTECH Report AES 1017585-2-1, Review of Degradation and Operation Assessments for Turkey Point Unit 4 Steam Generators for Cycles 25 and 26, Revision 1
Boric Acid Corrosion Control Program Quick Hit Self-Assessment Plan and Report
Calibration Data Sheets: 5.4-002
Certificate of NDE Personnel Qualification for examiners: J. Noble, R. Spillman, W. Gall, S. Crothers, D. Hancock, J. Timm
Certified Test Report for: Ultragel II-10225, Spotcheck Developer 06C05K, Spotcheck Penetrant 90J046, Spotcheck Cleaner/Remover 08H05K
FPL Radiographic Report for Summary No.: 263200
Krautkramer Transducer Certification for SN: 00W1K1, 01FKLD, SC1023, SC1038

Liquid Penetrant Examination Data Sheet for Summary Nos.: 257644, 257648
 Magnetic Particle Examination Data Sheet for Summary No.: 263200
 Procedure Qualification Records: 5.5-2
 Temperature Indicator Calibration Form for Thermometer SN: 183811
 Ultrasonic Instrument Linearity Record for scope: 01Y8FF
 Welder/Brazer Qualification Update Record for welders: D. McKelvey, B. Cox
 Welding Procedure Specifications: WPS-29
 Work Order 39023458-01, Replace degraded pipe between FCV-4-498 and CV-4-2902

Section 2RS01: Radiological Hazard Assessment and Exposure Controls

Procedures and Guidance Documents

0-ADM-023, Inventory Control and Accounting of Radioactive Sources, Rev. 2
 0-ADM-533, Corrective Action Program Guidance and Performance Assessment and Trending Analysis, Rev. 8
 0-ADM-600, Radiation Protection Manual, Rev. 1
 0-ADM-605, Control of Radioactive Material, Rev. 1
 0-HPA-030, Personnel Monitoring of External Dose, Rev. 1B
 0-HPA-031.2, Multibadge Exposure Monitoring, 0A
 0-HPS-021.3, Identification, Survey, and Release of Material for Unrestricted Use, Rev. 1
 0-HPS-023.1, Vacuum Cleaner Controls Inside the Radiation Controlled Area, Rev. 1
 0-HPS-025.2, Posting and Survey Requirements for Fuel Movement, Rev 1C
 0-HPS-027.1, Work Controls in Hot Particle Areas, Rev 0A
 0-HPS-053.5, Removal and Transports of CVCS, SFP, and RWB Fluid Filters, Rev. 0A
 0-HPS-053.6, Postings and Controls for Resin Transfers, Rev. 2
 0-HPS-092, Leak Testing of Radioactive Sources, Rev. 0A
 0-HPS-096.1, Decontamination of Tools, Equipment and Areas, Dated 10/02/07
 0-HPS-096.2, Decontamination of Reactor Cavity Using Primary Water, Rev. Approval Date 09/14/09
 0-HPS-096.3, Strippable Paint Decontamination, Rev. 0A
 0-HPS-106, Survey & Posting Guidelines for Plant Evolutions, Rev. 0A
 0-HPT-013, Portable Survey Instruments, Rev. 0A
 PI-AA-204, Condition Identification and Screening Process, Rev. 10
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10
 RP-AA-100-1001, Radiation Protection Conduct of Operations Guideline, Rev. 1
 RP-AA-101-2004, Method for Monitoring and Assigning Effective Dose Equivalent (EDE) for High Dose Gradient Work, Rev. 2
 RP-SR-100-1002, Radiation Worker Instruction and Guideline, Rev. 2
 RP-SR-101-1003, Personnel Contamination Monitoring and Decontamination, Rev. 1
 RP-SR-102-1001, Area Radiological Surveys and Analysis, Rev. 2
 RP-SR-103-1001, Posting Requirements for Radiological Hazards, Rev. 5
 RP-SR-103-1002, High Radiation Area Controls, Rev. 3
 RP-SR-103-1008, Remote Monitoring, Rev. 2
 RP-TP-101-1000, Exposure Investigations, Rev. 0
 RP-TP-107-1001, Storage of Highly Radioactive Material in the Reactor Cavity or Spent Fuel Pool, Rev. 0

Records and Data Reviewed

2011 NSTS Annual Inventory Reconciliation, Dated 01/11/11

Air Calculation Sheet, (ACS) A/S Log Ref No. P0-11-0670, U4 RCB 58', Dated 04/13/11
 ACS, A/S Log Ref No. P0-11-0674, U-4 RCB Upper Rx Cavity, Dated 04/13/11
 ACS, A/S Log Ref No. P0-11-0696, U-4 RCB Cavity Wall by 4C ECF, Dated 04/14/11
 ACS, A/S Log Ref No. P0-11-0755, U4 RCB Upper Rx Cavity, Dated 04/16/11
 ACS, A/S Log Ref No. P0-11-0756, U4 RCB Upper Rx Cavity, Dated 04/16/11
 ACS, A/S Log Ref No. P0-11-0759, U4 RCB Lower Rx Cavity, Dated 04/16/11
 ACS, A/S Log Ref No. P0-11-0763, U4 RCB Upper Rx Cavity, Dated 04/16/11
 ACS, A/S Log Ref No. P0-11-0764, U4 RCB 58' Lower Cavity, Dated 04/17/11
 ACS, A/S Log Ref No. P0-11-0765, U-4 RCB 58' South End, Dated 04/16/11
 ACS, A/S Log Ref No. P0-11-0770, U-4 RCB Upper Rx Cavity, Dated 04/17/11
 ACS, A/S Log Ref No. P0-11-0771, U-4 RCB Lower Rx Cavity, Dated 04/17/11
 ACS, A/S Log Ref No. P0-11-0778, U-4 RCB Lower Rx Cavity, Dated 04/17/11
 ACS, A/S Log Ref No. P2-11-0695, U-4 RCB Upper Rx Cavity, Dated 04/14/11
 Air Sample Logs (Form RP-SR-102-1001-F02) for samples from 03/15 - 03/23/11, 03/23 -
 03/24/11 and 03/25 - 03/26/11
 Area Access Log for North Evaporator Room, Dated 04/20/11
 HP-14.14, HP Radioactive Source Inventory Report, Dated 11/01/11
 HP-44:7, Log No. 11-0250, Unit 3 Charging Pump Room, Dated 01/24/11
 HP-44:7, Log No. 11-0822, Unit 3 Charging Pump Room, Dated 03/14/11
 HP-44:7, Log No. 11-0831, Unit 3 Charging Pump Room, Dated 03/15/11
 HP-44:7, Log No. 11-1975, Unit 3 Charging Pump Room, Dated 04/11/11
 HP-44:18, Log No. 11-2025, Unit 4 Containment 58' Elevation, Dated 04/13/11
 HP-44:24, Log No. 11-1300, Auxiliary Building Roof, Dated 03/29/11
 HP-44:24, Log No. 11-1974, Auxiliary Building Roof, Dated 04/11/11
 HP-44.40.1, Log No. 11-2402, Miscellaneous, Dated 04/20/11
 HP-44:40.2, Log No. 11-1708, Miscellaneous - Containment, Dated 04/06/11
 HP-44:40, Log No. 11-2019, Miscellaneous - Yards/DSW/Other, Dated 04/12/11
 HP-44:40, Log No. 11-2290, Miscellaneous - Yards/DSW/Other, Dated 04/17/11
 HP-44:40, Log No. 11-2298, Miscellaneous - Yards/DSW/Other, Dated 04/17/11
 HP-44.40.1, Log No. 11-1895, Miscellaneous - Auxiliary Building, Dated 04/09/11
 HP-44:52, Log No. 11-2111, Reactor Cavity/Unit 4, Dated 04/13/11
 HP-44:82, Log No. 11-1731, U-4 Seal Unit 4 Seal Table 30'6" Elevation, Dated 04/06/11
 HP-40:142, Log No. 11-1307, RWST and Associated Equipment, Dated 03/29/11
 HP-40:142, Log No. 11-1525, RWST and Associated Equipment, Dated 04/02/11
 HP-40:142, Log No. 11-1721, RWST and Associated Equipment, Dated 04/06/11
 HP-40:142, Log No. 11-2052, RWST and Associated Equipment, Dated 04/12/11
 HP-46:8, Log No. 2011-2027, RWB North Filling Room, Dated 04/12/11
 HP-46:8, Log No. 2011-2179, RWB North Filling Room, Dated 04/14/11
 HP-46:8, Log No. 2011-2200, RWB North Filling Room, Dated 04/14/11
 HP-46:8, Log No. 2011-2264, Miscellaneous - Containment, Dated 04/17/11
 Inter-Office Correspondence, RO-20, ASP-1, and L-12 Functional Check Values for Source
 Block CS-8, Dated 06/11/10
 Inter-Office Correspondence, RO-20, ASP-1, and L-12 Functional Check Values for Source
 Block CS-9, Dated 06/11/10
 LHRA/VHRA Guard Instructions Sheet for Entry under RWP 4003, Task 3
 LHRA/VHRA Guard Instructions Sheet for Entry under RWP 4014, Task 1, U-4 Rx Sump,
 Dated 04/18/11
 Locked High Radiation Area Lock Check, Dated 04/19/22

NRC Form 748, National Source Tracking Transaction Report, Florida Power & Light Company, Undated
 Radiation Safety Bulletin, Removal of RP Posting, Dated 04/21/11
 RP Shift HRA/LHRA/VHRA Restricted Key Inventory Logs, Dated 04/11 – 04/19/11
 RWP No. 10-3216, Reactor Water Storage Tank, Task 1, Outage Observations and Inspections (Non-contaminated), Rev. 1
 RWP No. 11-0028, SNM Process and Disposal, Rev. 00
 RWP No. 11-4010, Seal Table Work, Task No. 1, Install Low and High Pressure Seals – Insert and Retract Thimbles, Rev. 01
 RWP No. 11-4010, Seal Table Work, Task No. 2, Flux Map System - Maintenance on 5/10 Paths and Flux Mapper Drive Units, Rev. 01
 RWP No. 11-4010, Seal Table Work, Task No. 3, Thimble Tube Cleaning and Eddy Current, Rev. 01
 RWP No. 11-4105, Fuel Movement, Task No. 1, Fuel Movement – Including Unlatch, FOSAR, Core Mapping, Latch, Drag and Fuel Sipping (No 14' Access), Rev. 04
 RWP No. 11-4107, Reactor Head Set (from Stand to Cavity), Task No. 1, Reactor Head Set (from Stand to Cavity) – Including Cavity Ladder Install, Flange Cleaning, Cavity Seal Ring Removal, Stud Hole Plug and Guide Stud Removals, Rev. 03
 RWP No. 11-4109, Task 1, Upper Reactor Cavity Cleaning and Decon, Rev. 1
 RWP No. 11-4201, Task 1, Outage Observations and Inspections (Non-contaminated), Rev. 1
 RWP No. 11-4201, Task 2, Outage Observations and Inspections (Non-contaminated, High Rad), Rev. 1
 SEN0016A- RWP and Task Descriptions, Dated 03/02/11

Corrective Action Program (CAP) Documents

Action Request Number (AR) 00586248, QA Identified Review of RP HRA/LHRA Controls, Dated 10/10/10
 AR 01640592, Annual Nuclear material Inventory reports not labeled as exempt from public disclosure under 10-cfr 2.390, Dated 04/12/11
 AR 01641519, Identified chemical tank near posted LHRA at DTS skid, Dated 04/14/11
 AR 01641528, Observed Mopheads Lying Across Contaminated Area Boundary, Dated 04/14/11
 AR 01641529, Drum of Paint Chips not Labeled in RCA, Dated 04/14/11
 AR 01642317, After working on the polar crane on 58' of U4 containment an NPS electrician was identified as contaminated upon exiting the RCA control point, Dated 04/17/11
 AR 01642752, Contaminated tool found during hot tool room routine survey, Dated 04/18/11
 AR 01642849, RP Response Check Block Labeling, Dated 04/18/11
 AR 01643604, The neutron source located in the RP instrument calibration lab was not sufficiently secured per 0-ADM-023 due to the manner it was installed, Dated 04/20/11
 AR 01644098, Worker Removed Radiological Posting, Dated 04/21/11

Section 2RS2: ALARA

Procedures, Guidance Documents, and Manuals

0-ADM-533, Corrective Action Program Guidance and Performance Assessment and Trending Analysis, Rev. 8
 0-HPA-001, Radiation Work Permit Initiation and Termination, Rev. 1
 0-HPA-072, Installation, Control, and Removal of Permanent and Temporary Shielding, Rev. 0A
 0-HPA-073, Hot Spot Tracking and Reduction Program, Dated 07/24/08

PI-AA-204, Condition Identification and Screening Process, Rev. 10
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10
 RP-AA-104, ALARA Program, Rev. 1
 RP-AA-104-1000, ALARA Implementing Procedure, Rev. 1
 RP-SR-100-1002, Radiation Worker Instruction and Guideline, Rev. 2
 RP-TP-103-2003, Crud Burst Monitoring Requirements, Rev. 2A

Records and Data

Co-58 Historical Comparison Graph, Undated
 Cobalt Solubility (Co-58 and Co-60) Graph for 03/18 – 04/01/11
 Cumulative Curies Released (Co-58 and Co-60) Graph for 03/18 – 04/01/11
 Hard Gamma Emitters (Co-58, Co-60, Mn-54, Cr-51) Graph for 03/18 – 04/01/11
 Radiation Protection Work Plan, U3R25 Upper Cavity Survey and Decon (Post Drain Down),
 Work Plan
 No. 2010-U3R25 Upper Cavity Decon, Rev. 1, Dated 10/20/10
 Radiation Protection Work Plan, Lower Cavity, Survey and Decontamination (Post-Fuel
 Movement), Work Plan
 No. 2010-U3R25 Upper Cavity Decon, Rev. 0, Dated 09/05/10
 TEDE ALARA Assessment Sheet, RWP 11-4107, Cavity Seal Ring Removal
 Turkey Point Nuclear Plant, 5-Year ALARA Plan, 2011-2015, Rev. 0
 Turkey Point Nuclear Plant, ALARA review Board Meeting Minutes, Dated 04/05/11
 Units 3 and 4 Radiological Hot Spot Logs, 1st Qtr 2011
 USNRC Letter, “Duane Arnold Energy Center, ST. Lucie Nuclear Plant, Units 1 and 2, Seabrook
 Station, and Turkey Point Nuclear Plant, Unit 3 and 4 – Application to Use Effective
 Dose Equivalent Weighting Factors for External Exposure,” (TAC NOS. MD3821,
 MD3822, MD3823, MD3824, MD3825, MD3826).

CAP Documents

AR 01633619

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

Procedures and Guidance Documents

0-Health Physics Surveillance Procedure (HPS)-062.2, Use of the Self-Contained Breathing
 Apparatus, Dated 01/03/11
 0-HPS-063.2, Maintenance and Accountability of Respiratory Protective Equipment,
 Dated 06/28/10
 0-HPS-063.4, Selection and Issuance of Respiratory Protection Equipment, Dated 01/05/10
 0-Operation Procedure (OP)-060, Auxiliary Building HVAC, Dated 04/14/10
 Performance Improvement Procedure (PI)AA-204, Condition Identification and Screening
 Process, Revision (Rev.) 10
 PI-AA-205, Condition Evaluation and Corrective Action, Rev. 10
 Safety Department Administrative Directive (SAF-AD)-011), Testing for Grade D Breathing Air,
 Rev. 3
 Standard Work Description (SWD)-I-101-005, Portable Breathing Air System (MSA) Box
 Calibration, Dated 02/23/04
 Unit 4 Normal Operating Procedure 4-NOP-053, Containment Purge System, Rev. 2

Records and Data Reviewed

2011 Emergency Response Organization Team Including Electrical Maintenance, Mechanical Maintenance, and Instrument and Control Maintenance Qualified Staff Listing as of 04/14/11

Air Quality Certificate Data for the following compressor systems: ATLAS COPCO 638947 Primary (04/10/11), ATLAS COPCO 638270 Secondary (04/10/11), ATLAS COPCO B375713 Primary (04/10/11), ATLAS COPCO 638443 Secondary (04/10/11), ATLAS COPCO 997644 Secondary (04/10/11), KAESER ACE 075-24 (04/10/11), and KAESER ACE 075-25, (04/10/11)

AMS-4 Calibration Setting Data: S/Ns 1487 (10/04/10); 1079 (10/11/10); 2502 (10/05/10)

AMS-4 Weekly Response Check Data: April 1, 2011 S/Ns 1487; 1079; and 2502

Laboratory Report, Compressed Air/Gas Quality Testing Data for the following systems: Bauer SCBA Fire Brigade (03/11/09, 06/12/09, 12/12/09, 03/16/10, 06/22/10, 09/17/10, 12/17/10, 03/18/11)

Radiological Respirator Issue Record, 03/25 through 04/05/11

Respirator Types and Inventory Amount, 04/14/11

SCBA Inventory, Inspection, and Repair Record Quarterly Surveillance Data: 3rd Quarter 2009 and 2nd Quarter 2010

SCBA Inventory, Inspection, and Repair Record Monthly Surveillance Data: June 2009, February 2010, and March 2010

Work Order Task (WO) 40011130 01, Calibration of Breathing Air CO Monitors, Serial Numbers (S/Ns) 18082 (02/25/11, 03/16/11); 18084 (02/25/11, 03/16/11, 04/14/11); 18085, (02/25/11, 03/16/11, 04/14/11); 18081 (03/16/11, 04/14/11); 8083 (03/16/11, 04/14/11); 27079 (04/14/11)

CAP Documents

AR 00470071, Non-licensed Operator Assumed Duties of Outside SNPO with Expired Respirator Qualification

AR 00471663, Air Sample Information Slip Missing Information

AR 00472915, Unqualified ERO Personnel Due to Not Completing Annual Continuing Training

AR00582655, ALARA Procedure Does Not Contain All Elements for TEDE ALARA Assessments for All Radiological Respirator Use

AR 00584288, Rapid OE – Use of Wrong Wire Frames for SCBA Kits

AR01610906, PTN SCBA Qualifications Appear to Have Incorrect Due Dates in Learning Management System

AR 01625103, SNPO Assumed Watch With Expired Respirator Qualifications

AR 01641537, Determining Respiratory Quals in LMS Can Be Confusing

AR 01641619, Control Room E-Locker Improvements

AR 01642130, NRC RP Baseline Inspection

AR 01642838, Breathing Air Box Calibration Documentation

2RS8: Radioactive Material Processing and TransportationProcedures, Manuals, and Guides

0-HPA-045, "Process Control Program", Rev 0

0-HPS-040.5, "10CFR61 Compliance and Radioactive Waste/Material Shipment Classification and Characterization", Dated 06/22/10

0-HPA-040, "Receiving Radioactive Material", Dated 03/07/11

0-NCOP-502, "DTS Media Dewatering", Dated 05/20/10

RP-AA-108-1003, "Radioactive Materials Surveys for Shipment", Rev 0
RP-AA-108-1002, "Shipment of Radioactive Material", Rev 0
RP-AA-108-1004, "Packaging Radioactive Material for Shipment", Rev 0

Shipping Records and Radwaste Data

Shipment W-09-038, Type B, Dated 06/30/09
Shipment M-09-027, LSA II, Dated 04/21/09
Shipment M-10-12, LQ, Dated 03/15/10
Shipment M-10-025, LQ, Dated 04/28/10
Shipment W-11-002, LSA, Dated 02/09/11
10 CFR 61 Analysis for 2009 and 2010 DAW
10 CFR 61 Analysis for Primary Resin Liner PO001711-13
2010 Annual Radioactive Effluent Release Report

CAP Documents

AR 01621556
PTN-10-014, Turkey Point Oversight Report: Radioactive Waste Control Audit, Dated 06/08/10

Section 40A3: Event Followup

Procedures and Guidance Documents

0-Emergency Plan Implementing Procedure (EPIP)-20126, Off-Site Dose Calculations,
Dated 11/09/09
Letter (L-80-79) from Robert E. Uhrig, Vice President, Advanced Systems & Technology, Florida
Power and Light Company, to Mr. A. Schwencer, Chief, Operating Reactors Branch 1,
Division of Operating Reactors, U.S. Nuclear Regulatory Commission, Dated 03/10/80
Letter (L-80-109) from Robert E. Uhrig, Vice President, Advanced Systems & Technology,
Florida Power and Light Company, to Mr. A. Schwencer, Chief, Operating Reactors
Branch 1, Division of Operating Reactors, U.S. Nuclear Regulatory Commission,
Dated 03/28/80
Letter (L-80-274) from Robert E. Uhrig, Vice President, Advanced Systems & Technology,
Florida Power and Light Company, to Mr. Darrell G. Eisenhut, Director, Division of
Licensing, U.S. Nuclear Regulatory Commission, Dated 08/20/80

CAP Documents

AR 00403463, Source Traceability for Liquid Effluent Monitoring Calibrations

Section 71151: Performance Indicator (PI) Verification

Procedures and Guidance Documents

0-ADM-032, NRC Performance Indicators Turkey Point, Rev. 2
LI-AA-204-1001, NRC Performance Indicator Guideline, Rev. 0

Records and Data Reviewed

Turkey Point Access Control Entries Greater Than 100 mrem, 03/21/11 – 04/17/11

CAP Documents

AR 01627424, DAD Dose Rate Alarm, Dated 03/08/11
AR 01634015, Rate Alarm on Dosimeter, Dated 03/27/11

AR 01635576, Dose Rate Alarm in the NEB, Dated 03/30/11
AR 01636574, Individual Received Dose Rate Alarm, Dated 04/02/11

Minor Findings/Comments/Observations:

The following condition reports were written to document NRC observations/findings/violations during the inspection:

AR 1641529, Drum of Paint Chips not Labeled in RCA, 04/14/2011
AR 1641519, Identified Chemical Tank Near Posted LHRA at DTS Skid, 04/14/2011
AR 1641528, Observed Mopheads Lying Across Contaminated Area Boundary, 04/14/2011
AR 1641537, Determining Respiratory Quas in LMS Can Be Confusing, 04/15/2011.
AR 1641619, Control Room E-Locker Improvements, 04/15/2011
AR 1642130, NRC RP Baseline Inspection, 04/16/2011.
AR 1642838, Breathing Air Box Calibration Documentation, 04/18/2011.
AR 1642849, RP Response Check Block Labeling, 04/18/2011
AR 1643604, Neutron Source, 04/20/2011
AR 1644098, Worker Removed Radiological Posting, 04/21/2011

LIST OF ACRONYMS

4R26	Unit 4 Refueling Outage Cycle 26
AR	Action Request Number
CAP	Corrective Action Program
CFR	Code of Federal Regulations
CR	Condition Report
DOT	Department of Transportation
ED	electronic dosimeter
HPT	Health Physics Technician
HRA	High Radiation Area
IP	Inspection Procedure
MSL	Main Steam Line
NSTS	National Source Tracking System
ODCM	Offsite Dose Calculation Manual
OS	Occupational Radiation Safety
OA	Other Activity
PA	Protected Area
PCM	Personnel Contamination Monitor
PI	Performance Indicator
PM	Portal Monitor
PS	Public Radiation Safety
RCB	Reactor Containment Building
RAB	Reactor Auxiliary Building
RCA	Radiologically Controlled Area
RCB	Reactor Containment Building
RETS	Radiological Environmental Technical Specification
Rev.	Revision
RP	Radiation Protection
RS	Radiation Safety
RWB	Reactor Waste Building
RWP	Radiation Work Permit
TI	Temporary Instruction
TS	Technical Specification
U3	Unit 3
U4	Unit 4
UFSAR	Updated Final Safety Analysis
VHRA	Very High Radiation Area