



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

January 30, 2015

Mr. Mano Nazar
President and Chief Nuclear Officer
Nuclear Division
NextEra Energy
P.O. Box 14000
Juno Beach, FL 33408-0420

**SUBJECT: TURKEY POINT NUCLEAR GENERATING STATION - NRC INTEGRATED
INSPECTION REPORT 05000250/2014005 AND 05000251/2014005**

Dear Mr. Nazar:

On December 31, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Nuclear Generating Station, Units 3 and 4. On January 8, 2015, the NRC inspectors discussed the results of this inspection with Mr. Kiley and other members of your staff. Inspectors documented the results of this inspection in the enclosed integrated inspection report.

NRC inspectors documented four self-revealing findings of very low safety significance (Green) in this report. Three findings involved a violation of NRC requirements. Further, inspectors documented a licensee-identified violation which was determined to be Severity Level IV in this report. The NRC is treating these violations as non-cited violations (NCVs) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC resident inspector at the Turkey Point Nuclear Generating Station.

If you disagree with a cross-cutting aspect assignment or a finding not associated with a regulatory requirement in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC resident inspector at the Turkey Point Nuclear Generating Station.

M. Nazar

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In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC's Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Website at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

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

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

Enclosure: IR 05000250/2014005, 05000251/2014005
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Letter to Mano Nazar from Shane Sandal dated January 30, 2015.

SUBJECT: TURKEY POINT NUCLEAR GENERATING STATION - NRC INTEGRATED
INSPECTION REPORT 05000250/2014005 AND 05000251/2014005

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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: 05000250/2014005, 05000251/2014005

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

Facility: Turkey Point Nuclear Generating Station, Units 3 & 4

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

Dates: October 1, 2014 to December 31, 2014

Inspectors: T. Hoeg, Senior Resident Inspector
M. Endress, Resident Inspector
D. Mas-Peñaranda, Resident Inspector
A. Butcavage, Reactor Inspector
M. Coursey, Reactor Inspector
A. Vargas, Reactor Inspector
A. Nielsen, Senior Health Physicist
B. Pursley, Health Physicist
J. Rivera, Health Physicist
P. Capehart, Senior Operations Engineer

Approved by: Shane Sandal, Branch Chief (Acting)
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2014004, 05000251/2014005; 10/01/2014 – 12/31/2014; Turkey Point Nuclear Generating Station, Units 3 & 4; Radiological Hazard Assessment and Exposure Controls; Followup of Events and Notices of Enforcement Discretion.

The report covered a three-month period of inspection by the resident inspectors and specialist inspectors from the Region II office. Four Green findings, three of which were non-cited violations, were identified. The significance of inspection findings were identified by their color (Green, White, Yellow, or Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated June 2, 2011. The cross-cutting aspect was determined using IMC 0310, "Components Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

NRC-Identified and Self-Revealing Findings

Cornerstone: Initiating Events

- Green. A self-revealing non-cited violation (NCV) of Technical Specification (TS) 6.8.1, "Procedures", was identified for the licensee's failure to maintain an adequate procedure for gland sealing steam supply realignment. Specifically, the licensee failed to have initial conditions in place in the procedure that provided specific direction that steam supply to the gland sealing system cannot be transferred from the main steam system to the auxiliary steam system with a unit in Mode 1 or 2. The licensee took corrective action to add initial conditions to procedure 4-GOP-103 that would not allow gland seal system steam supply realignment while in Modes 1 or 2. The licensee entered this issue into their corrective action program (CAP) as action request (AR) 1967899.

The performance deficiency was more than minor because it was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have specific guidance in procedure 4-GOP-103 that prevented realigning the gland sealing steam supply while in Mode 1 or 2 resulted in lowering condenser vacuum and a subsequent reactor trip on low condenser vacuum when the gland sealing steam supply was being realigned with Unit 4 in Mode 1. The inspectors screened the finding using Attachment 4 to NRC Inspection Manual Chapter (IMC) 0609 and determined that the finding was a transient initiator contributor which required evaluation using Exhibit 1, "Initiating Events Screening Questions," of IMC 0609, Appendix A, "The Significance Determination Process (SDP) for Findings At-Power" (July 19, 2012). The inspectors determined that the finding was of very low safety significance (Green) because the performance deficiency did not result in a reactor trip and loss of mitigating equipment relied upon to transition the plant to a safe shutdown condition. The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure an adequate general operating procedure was available to support nuclear safety (H.1). (Section 40A3.2)

- Green: A self-revealing finding was identified for the licensee's failure to ensure an adequate design change was implemented during Unit 3 and Unit 4 instrument air compressor system upgrade modifications completed in 2013. Specifically, plant modifications EC 246991 and EC 246990 were accepted and placed in service by the licensee without verifying the control logic configuration would function properly and load under all conditions. As a result, the diesel-driven compressors would not load and pressurize the instrument air header in the event of a loss of instrument air pressure while in the standby mode of operation. Corrective actions included an immediate modification to the standby compressor loading control circuit to ensure the machine loaded automatically and revising general procedural guidance for compressor operation. The licensee entered this performance deficiency in their corrective action program as AR 01983607.

The performance deficiency was more than minor because it was associated with the design control attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have an adequate design for controlling the operation of the standby instrument air compressor resulted in a reactor trip due to the loss of instrument air pressure. The inspectors screened the issue under the initiating events cornerstone using Attachment 4 (June 19, 2012) and Exhibit 1 (June 19, 2012) of Appendix A to Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (June 2, 2011). The inspectors concluded that a detailed risk evaluation would be required because the finding was associated with the loss of a support system that resulted in a reactor trip and affected equipment that could be used by plant operators to mitigate the resulting plant transient. A senior reactor analyst (SRA) performed a detailed risk evaluation of this issue. The NRC model for Turkey Point was adjusted by: 1) increasing the initiating event frequency for a loss of instrument air (LOIA) event by one order-of-magnitude, and 2) the failure-to-run probability of the backup air compressors was set equal to 1.0. The change in core damage frequency results were below the 1E-6 threshold and the issue was determined to be of very low risk significance (Green). The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure instrument air system equipment was available and adequate to support nuclear safety (H.1). (Section 4OA3.3)

- Green: A self-revealing non-cited violation (NCV) of TS 6.8.1, Procedures, was identified when the licensee failed to fully implement procedure 3-EOP-ES-0.1, "Reactor Trip Response." Specifically, the licensee failed to take effective action to implement Step 25 of 3-EOP-ES-0.1 and maintain pressurizer pressure and level within their required bands in order to stabilize plant conditions following a loss of instrument air and a reactor plant trip. Corrective actions included training licensed operators on the implementation of EOP-ES-0.1. The licensee entered this performance deficiency in their corrective action program as action request 1983618.

The performance deficiency was more than minor because it was associated with the human performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors screened the issue under the initiating events cornerstone using Attachment 4 (June 19, 2012) and Exhibit 1 (June 19, 2012) of Appendix A to IMC 0609, "Significance

Determination Process” (June 2, 2011). The inspectors concluded that a detailed risk evaluation would be required by a senior reactor analyst (SRA) because the finding was associated with a transient initiator and operator actions to utilize equipment to mitigate the associated plant transient. The NRC model for Turkey Point was adjusted by setting the failure probability of the power-operated relief valve (PORV) to remain closed during an event equal to 1.0. This represented the impact of failing to follow the emergency operating procedures resulting in lifting the PORVs during the event. The change in core damage frequency results were below the 1E-6 threshold and the issue was thus determined to be of very low risk significance (Green). This finding was associated with a cross-cutting aspect in the training component of the human performance area because the licensee failed to ensure licensed operator training provided knowledge that the reactor coolant pump seals could operate for a short period of time without seal flow (H.9). (Section 4OA3.3).

Cornerstone: Occupational Radiation Safety

- Green: A self-revealing NCV of Technical Specification (TS) 6.12.1, High Radiation Area, was identified when a worker did not comply with a radiological barrier and entered a high radiation area (HRA) without proper authorization. Specifically, on March 24, 2014, a worker entered a HRA without a survey meter, without being made aware of radiological conditions in the area, and without a health physics technician (HPT) escort and subsequently received a dose rate alarm. Upon identification, the licensee immediately restricted the worker’s access to the Radiologically Controlled Area (RCA) and put out a site wide information notice to increase worker awareness of HRA entry requirements. This condition has been placed into the licensee’s corrective action program as action request (AR) 01951254.

The finding was determined to be more than minor because it was related to the Occupational Radiation Safety cornerstone attribute of Human Performance (radiation worker proficiency) and adversely affected the cornerstone attribute to ensure the adequate protection of worker health and safety. Specifically, because the worker failed to comply with TS requirements for entry into a HRA he was not knowledgeable of area radiological conditions. The finding was evaluated in accordance with IMC 0609, Appendix C, where it was determined to be Green because it did not involve ALARA planning or work controls, was not an overexposure, did not contain a substantial potential for an overexposure, and the ability to assess dose was not compromised. This finding involved the cross-cutting aspect of Human Performance, Avoid Complacency (H.12) because the worker failed to apply the human performance tools of self and peer checks prior to entering into an HRA. (2RS1)

Licensee-Identified Violations

A Severity Level IV violation of very low safety significance was identified by the licensee and has been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee’s corrective action program. This violation and corrective action tracking number are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 3 remained at 100 percent of rated thermal power (RTP) throughout this inspection period.

Unit 4 began the inspection period in Mode 6 during a planned refueling outage. On October 21, 2014, the unit was restarted and returned to full RTP on October 28, 2014. On November 30, 2014, the unit was shut down to Mode 3 to investigate and correct a steam leak on the secondary plant. On December 3, 2014, Unit 4 was restarted and returned to full RTP on December 6, 2014 where it remained through the end of this inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

Readiness for Seasonal Extreme Weather Conditions

a. Inspection Scope

During the month of November, the inspectors reviewed and verified the status of actions taken by the licensee for winter readiness prior to the onset of cool weather. The inspectors reviewed licensee procedure OP-AA-102-1002, "Seasonal Readiness," Attachment 7, "Cold Weather Readiness Check List," and Attachment 14, "Turkey Point Site Specific Guidance." The inspectors reviewed system health reports and open corrective action program (CAP) action requests (ARs) for the emergency diesel generators and auxiliary feed water pumps to determine if any deficiencies existed that could affect operation of equipment immersion heaters. The inspectors performed walk downs of systems that could be affected by cold weather as outlined in the licensee site specific guidance including the following areas:

- Unit 3 and Unit 4 emergency diesel generators
- Auxiliary feed water pumps
- Unit 3 and Unit 4 charging pumps
- Unit 3 and Unit 4 boric acid storage tanks

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 plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers by entering them into the CAP.

- 4A emergency diesel generator (EDG) while the 4B EDG was out of service (OOS)
- Train 1 Auxiliary Feed Water (AFW) with Train 2 AFW OOS
- 4B EDG while the 4A EDG was OOS

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walk Downs

a. Inspection Scope

The inspectors walked down the following five plant areas to evaluate conditions related to control of transient combustibles, 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 CAP to verify that fire protection problems were being identified and appropriately resolved. The inspectors accompanied fire watch roving personnel on a tour of fire protection impairments and risk significant fire areas to ensure monitoring of area status and to verify proper identification and handling of transient combustibles. The following areas were inspected:

- Unit 4 Containment, Fire Zone 59
- Unit 4 Reactor Control Rod Equipment Room, Fire Zone 61
- Unit 3 AFW Steam Supply Motor Operated Valve (MOV) Room, Fire Zone 84
- Unit 3 Component Cooling Water (CCW) Heat Exchanger and Pump Room, Fire Zone 54
- Unit 4 North Electrical Penetration Room, Fire Zone 26

b. Findings

No findings were identified.

1R08 Inservice Inspection Activities (Inspection Procedure 71111.08, Unit 4)

a. Inspection Scope

Non-Destructive Examination Activities and Welding Activities: From September 29, 2014, through October 9, 2014, the inspectors conducted an onsite review of the implementation of the licensee's Inservice Inspection (ISI) Program for monitoring degradation of the reactor coolant system (RCS), risk-significant piping and components, and containment systems in Unit 4. The inspectors' activities included a review of non-destructive examinations (NDE) to evaluate compliance with the applicable edition of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC), Section XI, and to verify that indications and defects (if present) were appropriately evaluated and dispositioned, in accordance with the requirements of the ASME Code, Section XI, acceptance standards.

The inspectors directly observed the following NDE mandated by the ASME Code 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 Testing (PT), Weld 2"-SI-2401-1, High Head Safety Injection Piping Weld, ASME Code Class 2
- Visual Examination (VT)-3, Reactor Vessel Interior Surface (B-N-1), ASME Code Class 1
- VT-3, Reactor Vessel, Interior Attachments Beyond Belt Line Region (B-N-2), ASME Code Class 1
- VT-3, Reactor Vessel, Removable Core Support Structure, (B-N-3), ASME Code Class 1
- Ultrasonic Examination (UT) High Head Safety Injection, Outside Containment Elbow to Pipe Weld, 4"-SI-2401-51, ASME Code Class 2
- UT, RCS Loop C Cold Leg Pipe to Pipe Weld 27.5"-RCS-1409-12, ASME Code Class 1

The inspectors reviewed records of the following NDE, mandated by the 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.

- VT-3, Unit-4 Control Rod Drive Mechanism (CRDM) Structural Support Assembly, ASME Code Class 1
- UT, Reactor Vessel, Intermediate Shell to Lower Shell Weld No.03, ASME Class 1
- UT, Reactor Vessel, Upper Shell to Intermediate Shell, Weld No.02, ASME Class 1

- UT, RCS Elbow to Reactor Vessel Inlet Nozzle, Weld No. 08 (DM Weld), ASME Class 1
- UT, Reactor Vessel Outlet Nozzle to Shell Weld at 250°, Weld No. 11, ASME Class 1
- UT, Reactor Vessel Inlet Nozzle to Shell Weld at 320°, ASME Class 1

During non-destructive surface and volumetric examinations performed since the previous refueling outage, the licensee did not identify any relevant indications that were analytically evaluated and accepted for continued service. Therefore, no NRC review was completed for this inspection procedure attribute.

Pressurized Water Reactor Vessel Upper Head Penetration Inspection Activities: For the Unit 4 vessel head, a bare metal visual (BMV) examination and Ultrasonic volumetric examinations were required this outage pursuant to 10 CFR 50.55a. The inspectors observed portions of the Unit 4 reactor vessel closure head BMV examinations in the field, and observed a sample of the remote UTs performed on the vessel upper head penetration (VUHP) CRDM penetrations. The inspectors reviewed NDE reports and the disposition of the BMV examination of the area adjacent to nozzle 59, along with the associated UT results for leak path examinations on nozzle No. 59. The UT reports associated with nozzles 1, 59, and 67 wall thickness examinations were reviewed in order to determine if the activities, including the disposition of indications and defects, were conducted in accordance with the requirements of ASME Code Case N-729-1 and 10 CFR 50.55a(g)(6)(ii)(D). In particular, the inspectors evaluated if the required UT scope/coverage was achieved, and limitations (if applicable) were recorded in accordance with the licensee procedures. Additionally, the inspectors evaluated if the licensee's criteria for BMV quality and instructions for resolving interferences and masking issues were consistent with 10 CFR 50.55a.

The licensee did not identify any relevant indications that were accepted for continued service during the UT examination. The BMV examination of the upper head recorded one indication in the area of nozzle No. 59 that was dispositioned through the site Boric Acid Program as originating from the level indication system joint disconnection process.

The licensee did not perform any welding repairs to the vessel head penetrations since the beginning of the last Unit 4 refueling outage; therefore, no NRC review was completed for this inspection procedure attribute.

Boric Acid Corrosion Control Program Inspection Activities: The inspectors reviewed the licensee's Boric Acid Corrosion Control Program (BACCP) activities to ensure implementation with commitments made in response to NRC Generic Letter 88-05, "Boric Acid Corrosion of Carbon Steel Reactor Pressure Boundary Components in PWR Plants," and applicable industry guidance documents. Specifically, the inspectors performed an on-site record review of the results of the licensee's containment walkdown inspections performed during the current fall refueling outage. The inspectors also interviewed the BACCP owner, conducted an independent walkdown of containment to evaluate compliance with licensee's BACCP requirements, and verified

that degraded or non-conforming conditions, such as boric acid leaks, were properly identified and corrected in accordance with the licensee's BACCP and CAP.

The inspectors reviewed the following ARs and associated corrective actions related to evidence of boric acid leakage, to evaluate if the corrective actions completed were consistent with the requirements of the ASME Section XI Code and 10 CFR Part 50, Appendix B, Criterion XVI.

- AR 01994996, Component ID 04/4T237, U-4 Reactor Vessel Head Nozzle, No. 59
- AR 01967938, Component ID 04/4-940L, RHR To Loop "C" Cold Leg Vent Valve
- AR 01967936, Component ID 4-298G, RCP"A" Seal Water Injection Valve

The inspectors reviewed the following engineering evaluations completed for evidence of boric acid leakage to determine if degraded components were documented in the CAP. The inspectors also evaluated corrective actions for any degraded components to determine if the licensee properly applied applicable corrosion rates to affected components and properly assessed the effects of corrosion induced wastage on structural or pressure boundary integrity.

- AR 01965050-06, Safety Injection to Loop "A" Cold Leg Check Valve, 4-875A, Active Body to Bonnet Leak
- AR 01853955, Active Leak on 4A Safety Injection Pump
- AR 01995385, CCW Pipe Corrosion
- BACCP Evaluation 94104448, 4E202 Excess Letdown HX Channel

Steam Generator Tube Inspection Activities: The licensee did not perform steam generator tube inspection activities during the fall 2014 refueling outage. Therefore, the inspectors did not implement the inspection procedure attributes applicable to tube examination and repair activities. However, the inspectors reviewed the latest Condition Monitoring and Operational Assessment Report for Unit 4, to verify that the licensee's evaluation of inspection results on the primary and secondary sides provided reasonable assurance that the tube integrity performance criteria would be met until the next scheduled inspection. The inspectors also verified that the planned tube inspection schedule was in accordance with the plant's technical specifications.

Identification and Resolution of Problems: The inspectors reviewed a sample of ISI-related problems that were identified by the licensee and entered into the CAP as ARs. The inspectors reviewed the ARs to confirm the licensee had appropriately described the scope of the problem and had initiated corrective actions. The corrective action documents reviewed by the inspectors are listed in the report Attachment.

The review also included the licensee's consideration and assessment of operating experience (OE) events applicable to the plant. Specifically the inspectors reviewed AR 01991897 associated with industry OE concerning CRDM seismic supports. The inspectors performed this review to ensure that the disposition was in compliance with 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," requirements. The OE identified a failure to perform VTs of the CRDM, ASME Class 1, seismic support plates

as required by the ASME Section XI Code. The licensee entered this issue into their CAP as AR Nos. 01991897 and 02016779. The licensee developed an operability evaluation and concluded that the supports for both units remained functional, but non-conforming. The licensee also initiated and completed corrective actions to perform the required VTs of the CRDM seismic support plates and associated load path components during the current Unit-4 refueling outage (RFO). The licensee identified that the Unit-3 examination will be performed during the next available Unit-3 outage when conditions are met for examination.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program

.1 Simulator Performance

a. Inspection Scope

On November 19, 2014, the inspectors assessed licensed operator performance in the plant specific simulator during job performance measures (JPM) during a licensed operator continuing training scenario. The training scenarios were associated with response to a power operated relief valve malfunction and response to a pressurizer level channel malfunction per JPM 01041013102 and JPM 01041057302 respectively. The inspectors checked that the JPM scenarios were performed in accordance with prescribed critical performance steps of the JPM and the appropriate procedures were utilized by the licensed operator being tested. Specifically, the inspectors observed the reactor plant operators performing the associated off normal reactor plant procedures and verified the operators complied with the applicable procedures for the given scenario.

The simulator board configurations were compared with actual plant control board configurations. The inspectors specifically evaluated the following attributes related to operator performance and 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 procedures
- Control board operation and manipulation, including high-risk operator actions
- Evaluator's control of the scenario and post scenario evaluation of crew performance

b. Findings

No findings were identified.

.2 Control Room Performance

a. Inspection Scope

The inspectors performed one focused control room observation and assessed licensed operator performance in the control room. These observations included response to alarms, communications, shift turnovers, coordination of plant activities, mode changes, and response to off normal plant conditions. These observations were conducted to verify operator compliance with station technical specifications, operating guidelines, procedure use and adherence, control and manipulation of components, and control room communications.

On December 4, 2014, the inspectors observed a Unit 4 reactor startup per procedure 4-GOP-301, Hot Standby to Power Operations. The inspectors reviewed the expected critical boron concentration calculation and the control rod pull sequence plan used during the reactor startup. The inspectors reviewed the recorded reactor startup physics data to ensure it was correctly calculated by the licensee reactor engineering staff. The inspectors focused on the following conduct of operations attributes as appropriate:

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

b. Findings

No findings were identified.

.3 Licensed Operator Regualification

a. Inspection Scope

Annual Review of Licensee Regualification Examination Results: On December 11, 2014, the licensee completed the annual regualification operating examinations required to be administered to all licensed operators in accordance with 10 CFR 55.59(a)(2). The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Regualification Program." These results were compared to the thresholds established in Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," Appendix I, "Operator Regualification Human Performance Significance Determination Process."

b. Findings

No findings were identified.

1R12 Maintenance Effectivenessa. Inspection Scope

The inspectors reviewed the following equipment problem documented in the licensee corrective action program 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 procedure ER-AA-100-2002, "Maintenance Rule Program Administration." The inspector's 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 of the corrective maintenance activities. The inspectors verified that equipment problems were being identified and entered into the corrective action program. The inspectors used the licensee maintenance rule data base, system health reports, and the corrective action program as sources of information on tracking and resolution of equipment problems.

- AR 02005884, 3B Component Cooling Water Heat Exchanger

b. Findings

No findings were identified.

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

The inspectors completed in-office reviews and control room inspections of the licensee's risk assessment of four emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using the requirements of 10 CFR 50.65(a)(4), the recommendations of Nuclear Management and Resource Council 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 3, and procedures 0-ADM-068, "Work Week Management," WM-AA-1000, "Work Activity Risk Management," and 0-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 four risk assessments during the inspection period:

- AFW Train 1, 3A Residual Heat Removal (RHR) Pump, and 3C Emergency Containment Cooler (ECC) OOS
- 3A EDG, 3A High Head Safety Injection (HHSI) Pump, and 3C ECC OOS
- 4B EDG, 4B HHSI Pump, and AFW Train 2 OOS
- 4B Containment Spray Pump , 4B Component Cooling Water Heat Exchanger, and 4C ECC OOS

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

For the five operability evaluations described in the action requests (AR) listed below, the inspectors evaluated the technical adequacy of licensee evaluations to ensure that technical specification operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The inspectors reviewed the UFSAR 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 1990010, 4C ECC Fan Auto-Start of 4A ECC miswired
- AR 2000293, U4 RCS Loop RTD cross calibrations
- AR 2003231, Corroded CCW piping between valves 3-711B and 3-710B
- AR 2000346, U4 Pressurizer steam space sample line 4-950 leakage
- AR 02013583, Unit 3 unidentified reactor coolant leakage.

b. Findings

No findings were identified.

1R18 Plant Modifications

a. Inspection Scope

The inspectors reviewed a temporary plant modification. The modification was performed in accordance with licensee procedure 0-ADM-503, "Temporary System Alterations." The inspectors reviewed the 10 CFR 50.59 screening and technical evaluation to verify that the modification had not affected system operability or availability. The inspectors reviewed associated plant drawings and UFSAR documents impacted by this modification and discussed the changes with licensee personnel to verify that the installation was consistent with the modification documents. The

inspectors walked down available portions of the modification to determine if it was installed in the field as described in the subject Engineering Change (EC) documentation. Additionally, the inspectors verified that any problems associated with the modifications were being identified and entered into the licensee's corrective action program.

- EC 281892, 3B EDG Radiator Fan Exhaust Redirect Temporary Modification

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the five post-maintenance tests and associated work orders (WO) listed below, the inspectors reviewed the test procedures and either witnessed the testing or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was operable. The inspectors used licensee procedure 0-ADM-737, "Post Maintenance Testing," in their assessments. The inspectors reviewed the following WOs:

- WO 40189760, Containment water level loop L-4-6309B maintenance
- WO 40341352, 4A2 battery charger replace x302 PC board
- WO 40345603, Valve 4-950 reactor coolant system leakage repair
- WO 40348721, 3CD instrument air compressor fuel priming pump modification
- WO 40275817, Component cooling water instrument FI-4-618 corrective maintenance

b. Findings

No findings were identified.

1R20 Refueling Outage Activity

.1 Unit 4 Refueling Outage PT4-28

a. Inspection Scope

Outage Planning, Control and Risk Assessment

During daily outage planning activities by the licensee, the inspectors reviewed the risk reduction methodology employed by the licensee during refueling outage (RFO) PT4-28 meetings including outage control center (OCC) morning meetings, operations daily team meetings, and schedule performance update meetings. The inspectors examined the licensee implementation of shutdown safety assessments during PT4-28 in

accordance with administrative procedure ADM-051, "Outage Risk Assessment and Control," to verify if a defense in depth concept was in place to ensure safe operations and avoid unnecessary risk. In addition, the inspectors regularly monitored outage planning and control activities in the OCC and interviewed responsible OCC management personnel during the outage to ensure system, structure, and component configurations and work scope were consistent with Technical Specification (TS) requirements, site procedures, and outage risk controls.

Monitoring of Shutdown Activities

The inspectors performed walk downs of important systems and components used for residual heat removal from the reactor core and spent fuel pool during the shutdown period including the intake cooling water system, component cooling water system, and spent fuel pool cooling system.

Outage Activities

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

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

Monitoring of Plant Heat up and Containment Closure Activities

The inspectors examined the applicable technical specifications, license conditions, and verified administrative prerequisites were being met prior to reactor plant mode changes. The inspectors reviewed measured reactor coolant system leak rates, and verified containment integrity was properly established. The inspectors performed a containment closeout inspection prior to the reactor plant startup to verify no evidence of leakage or debris was left in containment that could affect plant operations.

Reactor Startup and Mode Changes

On October 22, 2014, the inspectors observed the Unit 4 reactor startup and turbine synchronization to the electrical grid and associated Mode changes. The inspectors reviewed the recorded reactor startup physics data to determine if it was as calculated

by the licensee reactor engineering staff. The inspectors determined the startup and Mode changes were performed in accordance with licensee procedures 0-OSP-040.16, Initial Criticality After Refueling Outage and Nuclear Design Verification, and 3-GOP-301, Mode 3 to Power Operations.

Corrective Action Program

The inspectors reviewed ARs generated during PT4-28 to evaluate the licensee's threshold for initiating ARs and to verify priorities, mode holds, and significance levels were assigned as required. Resolution and implementation of corrective actions of several ARs were also reviewed for completeness. The inspectors routinely reviewed the results of quality assurance (QA) daily surveillances of outage activities.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or observed the following seven surveillance tests to verify that the tests met the technical specification requirements, the final safety analysis report description, the licensee's procedural requirements, and demonstrated the systems were capable of performing their intended safety functions and operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to the positions or status required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the licensee's corrective action program. The inspectors reviewed the following tests:

Surveillance Test:

- 4-OSP-202.2, Engineered Safeguards Integrated Test "B Safeguards"
- 4-OSP-203.1, Engineered Safeguards Integrated Test "A Safeguards"
- 4-OSP-089.1, Turbine generator over speed trip test

In-Service Test:

- 4-OSP-068.5B, 4B Containment Spray Pump in-service Test
- 3-OSP-062.2C, Safety injection system quarterly in-service valve testing

Containment Isolation Valve Test:

- 4-OSP-051.5, Unit 4 Local Leak Rate Test, Penetration 46A
- 4-OSP-051.5, Unit 4 Local Leak Rate Test, CK-4-298A, CK-4-298B

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

a. Inspection Scope

On November 14, 2014, the inspectors observed an emergency preparedness drill and the performance of the licensee's emergency response organization. The drill included fire in and subsequent loss of the 3A EDG and a 3B steam generator tube rupture followed by a stuck open 3B steam dump to atmosphere valve. This all resulted in the site declaring a Site Area Emergency and notification to state of Florida, county official, and the NRC per licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. The inspectors observed the crew in the plant simulator including simulated implementation of emergency procedures and staff in the Technical Support Center (TSC) using the event classification guidelines and emergency response procedures. During the drill, the inspectors observed the simulator and TSC staff verify that emergency classification and notifications were made in accordance with the licensee emergency plan implementing procedure 0-EPIP-20101. The inspectors attended the licensee's post drill critique meeting. The licensee's critique items were reviewed and inspector observations were discussed with the licensee to verify that drill issues were identified and captured in the corrective action program.

On December 9, 2014, the inspectors observed a licensed operator training evolution in the simulator. The training included a loss of component cooling water and loss of condenser vacuum followed by a large break loss of coolant accident. This all resulted in the site declaring a Site Area Emergency and notification to state of Florida, county official, and the NRC per licensee procedure 0-EPIP-20101, Duties of the Emergency Coordinator. The inspectors observed the crew in the plant simulator including simulated implementation of emergency procedures, event classification guidelines, and emergency response procedures. During the drill, the inspectors observed the crew simulating emergency classification and notifications in accordance with the licensee emergency plan. The inspector attended the licensee's post training critique meeting to verify that training issues were identified and discussed as part of the crew training evaluation.

b. Findings

No findings were identified.

2. RADIATION SAFETY

Cornerstone: Public Radiation Safety and Occupational Radiation Safety

2RS1 Radiological Hazard Assessment and Exposure Controls

a. Inspection Scope

Inspection Planning: The inspectors reviewed licensee Performance Indicator (PI) data for the Occupational Exposure Cornerstone. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radiological Hazard Assessment: During facility tours, the inspectors directly observed postings and physical controls for radiation area, HRA and airborne radioactivity locations established within the Unit 4 (U4) containment, Unit 3 (U3) and U4 auxiliary buildings, and radioactive waste (radwaste) processing and storage locations. The inspectors independently measured radiation dose rates or directly observed conduct of licensee radiation surveys for selected equipment and areas within Radiologically Controlled Area (RCA) locations. Established radiological controls were evaluated for selected U4 Refueling Cycle 28 Outage (U4R28) tasks including seal table work and core barrel insertion as well as secondary side steam generator (SG) maintenance. The inspectors reviewed and evaluated surveys conducted and records maintained for selected RCA areas and/or refueling outage tasks including surveys for alpha emitters, hot particles, airborne radioactivity, potential dose rate gradients, and upcoming pre-task surveys. The inspectors also discussed changes to plant operations that could contribute to changing radiological conditions since the last inspection.

Instructions to Workers: During facility tours, the inspectors observed and evaluated the adequacy of container labeling and area postings for the current U4 outage activities. For selected outage jobs, the inspectors attended pre-job briefings and reviewed the Radiation Work Permits (RWP) details to assess communication of radiological control requirements and current radiological conditions to workers. Electronic Dosimeter (ED) alarm logs were reviewed and workers responses to dose and dose rate alarms during selected work activities were evaluated. ED alarm set-points and worker stay times were evaluated against radiation survey results.

Contamination and Radioactive Material Control: The inspectors observed surveys of material and personnel being released from the RCA using small article monitor (SAM), personnel contamination monitor, and portal monitor instrumentation. SAM equipment sensitivity, alarm set-points, and release program guidance were discussed with licensee staff. The inspectors also reviewed records of leak tests on selected sealed sources, discussed nationally tracked source transactions with licensee staff, and verified sources within select storage locations.

Radiological Hazards Control and Work Coverage: Licensee controls for areas where dose rates could change significantly as a result of plant shutdown and refueling operations were reviewed and discussed. The inspectors reviewed RWPs for work within airborne radioactivity areas. For potential HRA tasks involving significant dose

rate gradients, e.g., SG hand hole reach-ins, the inspectors evaluated the use and placement of whole body and extremity dosimetry to monitor worker exposure. Controls and their implementation for storage of irradiated material within the U4 spent fuel pool (SFP) were reviewed and discussed with the licensee.

Risk-Significant High Radiation Area and Very High Radiation Area Controls: The inspectors evaluated access barrier effectiveness for selected U4 containment building, U3&4 auxiliary building Locked High Radiation Area (LHRA), and Very High Radiation Area (VHRA) locations. Procedures for LHRA and VHRA controls were discussed with health physics (HP) supervisors.

Radiation Worker Performance and Radiation Protection Technician Proficiency: Occupational worker adherence to selected RWPs and Radiation Protection Technician (RPT) proficiency in providing U4 containment and auxiliary building job coverage were evaluated through direct observations and discussions with licensee staff.

Problem Identification and Resolution: CAP documents 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 (PI)-AA-104-1000, Corrective Action, Rev. 0. The inspectors also evaluated the scope of the licensee's internal audit program and reviewed recent assessment results.

Radiation protection activities were evaluated against the requirements of the Updated Final Safety Analysis Report (UFSAR) Section 11; 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 of the report Attachment.

b. Findings

Introduction: A self-revealing, Green NCV of TS 6.12.1, High Radiation Area, occurred when a worker entered an HRA without meeting the entry requirements.

Description: On March 24, 2014, a plant radiation worker entered a posted HRA on the 14 ft elevation in the U3 containment building. The worker was not logged onto an RWP that authorized HRA entry, had not received the required HRA briefing and had not notified Radiation Protection (RP) prior to entry. The area was posted, "Caution High Radiation Area", "Notify RP Prior to Entry", and "HRA Briefing Required." Shortly after entering the area, the worker's dosimetry alarmed, he stopped work and exited the area. It was determined that the worker had signed onto RWP No. 14-3008, Task 1, "Non-High Rad Maintenance Support." The dose rate alarm setpoint on the RWP 14-3008 was 20 millirem per hour (mrem/hr). Accessible dose rates in the area were as high as 120 mrem/hr. The highest dose rate encountered by the worker was 27.8 mrem/hr before he stopped work and exited the area. He received 1.4 mrem for the entry. The licensee's investigation concluded the worker's entry into the area without regard to the posting was due to an individual human performance error and was inadvertent.

Analysis: Failure to acknowledge and comply with established radiological barriers and entry requirements for an HRA in accordance with TS 6.12.1 was a performance deficiency. The finding was determined to be more than minor because it was related to the Occupational Radiation Safety cornerstone attribute of Human Performance (radiation worker proficiency) and adversely affected the cornerstone attribute to ensure the adequate protection of worker health and safety. Specifically, because the worker failed to comply with TS requirements for entry into a HRA, he was not knowledgeable of area radiological conditions. The finding was evaluated in accordance with IMC 0609, Appendix C, where it was determined to be Green because it did not involve ALARA planning or work controls, was not an overexposure, did not contain a substantial potential for an overexposure, and the ability to assess dose was not compromised. This finding involved the cross-cutting aspect of Human Performance, Avoid Complacency [H.12] because the worker failed to self and peer check prior to entering a posted HRA.

Enforcement: Technical Specification 6.12.1 requires individuals entering HRAs to meet one or more of the following criteria: a) be provided with a survey meter; b) wear an ED and be made aware of radiological conditions in the area; or c) be escorted by a Health Physics Technician (HPT). Contrary to the above, on March 24, 2014, a worker entered a HRA without a survey meter, without being made aware of radiological conditions in the area, and without a HPT escort. Immediate corrective actions taken by the licensee were to restrict the worker from the RCA pending further investigation and issue a site communication on HRA entry compliance. Because this finding was of very low safety significance and entered into the licensee's CAP as AR 01951254, this finding is being treated as an NCV consistent with Section 2.3.2 of the NRC Enforcement Policy. (NCV 05000250/2014005-01, Non-compliance with HRA entry requirements)

2RS6 Radioactive Gaseous and Liquid Effluent Treatment

a. Inspection Scope

Radioactive Effluent Treatment Systems: The inspectors walked down selected components of the gaseous and liquid radioactive waste (radwaste) processing and effluent discharge systems. To the extent practical, the inspectors observed and evaluated the material condition of in-place waste processing equipment for indications of degradation or leakage that could constitute a possible release pathway to the environment. Inspected components included liquid holding tanks, air cleaning systems, effluent monitoring equipment, and associated piping and valves. The inspectors interviewed licensee staff regarding radwaste equipment configuration and effluent monitoring operations. The inspectors also reviewed surveillance testing records for auxiliary building exhaust filtration systems.

Effluent Sampling and Release. The inspectors observed the collection and processing of gaseous effluent samples from the plant vent stack. The inspectors reviewed recent liquid and gaseous release permits including pre-release sampling results, effluent monitor alarm set points, and public dose calculations. The inspectors reviewed the 2012 and 2013 Annual Radioactive Effluent Reports to evaluate reported doses to the public, to review any anomalous results, and to review Offsite Dose Calculation Manual

(ODCM) changes. The inspectors also reviewed special reports submitted for radiation monitors that were out of service and associated compensatory sampling records. The inspectors reviewed results of the 2012 and 2013 radiochemistry cross-check program. The inspectors also reviewed effluent source term evaluation and changes to effluent release points. In addition, the inspectors evaluated recent land use census results and meteorological data used to calculate doses to the public. The inspectors reviewed the licensee's groundwater monitoring program as part of Inspection Procedure 71124.07.

Problem Identification and Resolution: The inspectors reviewed corrective action documents in the area of gaseous and liquid effluent processing and release. The inspectors evaluated the licensee's ability to identify and resolve the issues. The inspectors also reviewed recent self-assessment results.

Radwaste system operation and effluent processing activities were evaluated against requirements and guidance documented in the following: 10 CFR Part 20; 10 CFR Part 50 Appendix I; ODCM; Final Safety Analysis Report (FSAR) Section 11; Regulatory Guide (RG) 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants"; RG 1.109, "Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50 Appendix I"; NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants: A Guidance Manual for Users of Standard Technical Specifications"; and Technical Specifications (TS) Section 6. Procedures and records reviewed during the inspection are listed in the report Attachment.

b. Findings

No findings were identified.

2RS7 Radiological Environmental Monitoring Program (REMP)

a. Inspection Scope

REMP Implementation: The inspectors observed routine sample collection and surveillance activities as required by the licensee's REMP. The inspectors noted the material condition and operability of airborne particulate filter and iodine cartridge sample stations and observed collection of weekly air samples at selected monitoring locations. The inspectors checked environmental thermo luminescent dosimeters for material condition at selected sites. In addition, the inspectors reviewed and evaluated land use census results, changes to the ODCM, monitoring for hard-to-detect radionuclides, and sample collection and processing activities.

The inspectors reviewed calibration records for selected environmental air samplers. The inspectors also reviewed the 2013 Radiological Environmental Operating Report, the 2013 Annual Radioactive Effluent Report, and procedural guidance for environmental sample collection and processing. Selected environmental

measurements were reviewed for consistency with licensee effluent data, evaluated for radionuclide concentration trends, and compared with detection level sensitivity requirements.

Ground Water Protection: The inspectors reviewed the licensee's continued implementation of the industry's Ground Water Protection Initiative (Nuclear Energy Institute (NEI) 07-07) and reviewed recent monitoring well results. The inspectors discussed program guidance for dealing with spills, leaks, and unexpected discharges with licensee staff and reviewed recent entries into the 10 CFR 50.75(g) decommissioning file. The inspectors reviewed and discussed the licensee's program for monitoring of structures, systems, and components with the potential to release radioactive material to the environment. Potential effluent release points due to onsite surface water bodies were also evaluated.

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

Problem Identification and Resolution: The inspectors reviewed corrective action documents in the areas of radiological environmental monitoring, groundwater protection, and meteorological tower maintenance. The inspectors evaluated the licensee's ability to identify and resolve the issues. The inspectors also reviewed recent self-assessment results, including audit results from the State of Florida environmental laboratory.

REMP implementation and meteorological monitoring activities were reviewed against the guidance and requirements of 10 CFR Part 20; Appendices E and I to 10 CFR Part 50; TS Section 6; FSAR Chapter 2; ODCM; RG 4.15, "Quality Assurance for Radiological Monitoring Programs (Normal Operation) - Effluent Streams and the Environment"; Safety Guide 23, "Onsite Meteorological Programs"; Branch Technical Position, "An Acceptable Radiological Environmental Monitoring Program" – 1979; NEI 07-07, "Industry Groundwater Protection Initiative – Final Guidance Document"; and approved licensee procedures. Documents reviewed are listed in the report Attachment.

b. Findings

No findings were identified.

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

a. Inspection Scope

Waste Processing System Program Review: The inspectors reviewed and discussed the status of the radioactive waste processing systems relative to the current Updated Final Safety Analysis Report (UFSAR) and Process Control Program (PCP) documents. The inspectors discussed component function and radioactive waste (radwaste) program implementation with licensee staff.

For dry active waste (DAW), and primary and secondary resins, the inspectors reviewed 10 CFR Part 61 waste stream analyses. The inspectors evaluated analyses for hard-to-detect nuclides, use of scaling factors, and quality assurance (QA) activities for the waste stream characterizations by the current vendor analysis laboratory. The waste stream sampling methodologies and the resultant data used in select shipping and waste processing activities were evaluated and discussed with responsible radwaste staff.

Radioactive Material Storage: During walk-downs of radioactive material and radioactive waste storage areas, the inspectors observed the physical condition and labeling of storage containers and the posting of Radioactive Material Areas. The inspectors also reviewed licensee procedural guidance for storage and monitoring of radioactive material. RCA storage areas evaluated included select Unit 3 and Unit 4 auxiliary building locations, Dry Storage Warehouse, and main RCA yard material and waste storage areas.

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

Transportation: During the onsite inspection, the inspectors directly observed and evaluated proficiency of the responsible staff during preparation of a radioactive material shipment containing Dry Active Waste (DAW). Training provided to radioactive waste staff responsible for preparation of the shipments to meet Department of Transportation (DOT) regulations was evaluated.

Additional shipping records were reviewed for consistency with licensee procedures and compliance with NRC and DOT regulations. The inspectors reviewed emergency response information, DOT shipping package classification, waste classification, and radiation survey results. Licensee procedures for labeling containers stored onsite were evaluated. In addition, training status for selected individuals currently involved in radioactive material shipping activities was reviewed.

Problem Identification and Resolution: The inspectors reviewed selected Corrective Action Program (CAP) documentation in the areas of radwaste processing and radwaste /radioactive material shipping. The inspectors evaluated the licensee's ability to identify and resolve identified issues in accordance with Performance Improvement procedure PI-AA-104-1000, Corrective Action, Rev 0. The inspectors also evaluated the scope of the licensee's internal audit program.

Radwaste processing activities and equipment configuration were reviewed for compliance with the licensee's Process Control Program (PCP), UFSAR Chapter 11; TS 6.8.1, Procedures and Programs, and approved procedures. Waste stream characterization analyses were reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 61, and guidance provided in the Branch Technical Position on Waste Classification (1983). Transportation program implementation was reviewed against regulations detailed in 10 CFR Part 20, 10 CFR Part 71, and 49 CFR Parts 172-178. 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

b. Findings

No findings were identified

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

.1 Mitigating Systems

a. Inspection Scope

The inspectors checked licensee submittals for the Unit 3 and Unit 4 mitigating system performance indicators (PIs) listed below for the period October 1, 2013, through September 30, 2014, to verify the accuracy of the PI data reported during that period. Performance indicator definitions and guidance contained in NEI 99-02, "Regulatory Assessment Performance Indicator Guideline," and licensee procedure 0-ADM-032, "NRC Performance Indicators Turkey Point," were used to check the reporting for each data element. The inspectors reviewed operator logs, plant status reports, condition reports, licensee event reports, system health reports, and PI data sheets to verify that the licensee had identified the required data, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

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

b. Findings

No findings were identified.

.2 Radiation Safety Cornerstones

a. Inspection Scope

Occupational Radiation Safety Cornerstone: The inspectors reviewed the Occupational Exposure Control Effectiveness PI results for the Occupational Radiation Safety Cornerstone from July 2013 through September 2014. For the assessment period, the inspectors reviewed electronic dosimeter alarm logs and corrective actions related to controls for exposure significant areas. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the report Attachment.

Public Radiation Safety Cornerstone: The inspectors reviewed the Radiological Control Effluent Release Occurrences PI results for the Public Radiation Safety Cornerstone from July 2013 through September 2014. For the assessment period, the inspectors reviewed cumulative and projected doses to the public contained in liquid and gaseous release permits and corrective actions related to Radiological Effluent Technical Specifications/ODCM issues. The inspectors also reviewed licensee procedural guidance for collecting and documenting PI data. Documents reviewed are listed in the report Attachment.

b. Findings

No findings were identified.

4OA2 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 printed summaries of ARs and by reviewing the licensee's electronic AR database. Additionally, RCS unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2 Semi-Annual Trend

a. Inspection Scope

The inspectors performed a review of the licensee's records including action requests, work orders, and narrative logs to assess a number of recent water intrusion events associated with various safety related systems, structures, and components during the calendar year of 2014. The inspector reviewed the licensee's common cause evaluation report associated with action request 02003835, Adverse Trend on Water Intrusion Events. The inspectors' review was focused on the licensee evaluation of recent events where they identified water in conduits, on floors, and electrical cabinets. The inspectors evaluated the effectiveness of the licensee's corrective actions and the significance of the problems including attributes such as accurate documentation, reportability, corrective actions, and problem resolution.

b. Findings and Observations

No inspector findings were identified. The licensee determined that there was no common cause for the water intrusion conditions and it was not directly related to local precipitation in the area of the plant. The inspectors noted that in most cases the water intrusion events were due to lack of maintenance and housekeeping to ensure door seals, floor drains, and sealed connections are properly monitored and maintained. The licensee corrected the water intrusion conditions as they were identified and no adverse effects resulted from the water intrusion events. The inspectors did not identify any additional trends not observed by the licensee's trending activities.

4OA3 Event Follow-up

.1 (Closed) LER 05000250/2014-003-00, Manual Actuation of the Reactor Protection System Due to Failure of Group Step Counter

On April 23, 2014, the licensee manually opened the reactor trip breakers as required by the action of Technical Specification 3.1.3.3 due to the group step counter demand position indicator (Group 1 and Group 2) not within 2 steps of each other. The reactor was subcritical in Mode 3 progressing to reactor startup at the time of the manual reactor trip. All rods fully inserted and the unit remained in Mode 3. The licensee determined that the failure of the group step demand counter position indicator to increment was due to the supervisory data logging card A114 not being fully seated in the circuit card rack. The licensee determined the root cause of the event was an inadequate procedure for rod control preventative maintenance that did not require a visual inspection or independent verification to ensure the card was properly seated. Corrective actions were performed in accordance with AR 1960842 and included revising the Rod Control System Preventative Maintenance and Power Cabinet Functional Test procedure to require a visual inspection and independent verification to verify engagement of printed circuit boards with the circuit card rack. The inspectors reviewed the LER and the associated corrective action document (AR 1960842) to verify the accuracy and

completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors also reviewed the LER and AR to identify any licensee performance deficiencies associated with the issue. No performance deficiencies were identified by the inspectors during the review. This LER is closed.

.2 (Closed) LER 05000251/2014-002-00, Automatic Actuation of the Reactor Protection System Due to Low Main Condenser Vacuum

The LER documented that on May 25, 2014, while Unit 4 was operating at 20 percent power during a shutdown to repair an unrelated equipment issue, an unplanned automatic reactor trip occurred due to low condenser vacuum. The lowering condenser vacuum occurred during the transfer of steam supply to the gland sealing steam system from the Unit 4 main steam system to the Unit 3 auxiliary steam system. The licensee determined the cause of the trip to be a failure of personnel to adequately address the integrated system status as part of the decision making process used to realign the steam supply to the gland sealing system. A contributing cause was determined to be that procedure 4-GOP-103, "Power Operation to Hot Standby," allowed the steam supply realignment to be performed while the unit was in Mode 1. Corrective actions included; the revision of 4-GOP-103 to include specific direction that the steam supply to the gland sealing steam system cannot be transferred from the main steam system to the auxiliary steam system with the unit in Mode 1 or 2, and provide training to all licensed operators on the integrated system response aspect of risk-based decision making. The inspectors reviewed the LER and the root cause evaluation (AR 1967899) documenting this event. This LER is closed.

a. Inspection Scope

In addition to reviewing the LER, the inspectors reviewed the licensee's root cause evaluation (RCE), Unit 4 technical specifications, and the post trip review (PTR) restart report. The inspector's verified the timeline of events associated with the LER and the immediate and subsequent corrective actions taken by the licensee to address the issue.

b. Findings

Introduction: A Green self-revealing non-cited violation (NCV) of Technical Specification (TS) 6.8.1, Procedures, was identified for the licensee's failure to maintain an adequate procedure for gland sealing steam supply realignment. Specifically, the licensee failed to have initial conditions in place in the procedure that provided specific direction that steam supply to the gland sealing system cannot be transferred from the main steam system to the auxiliary steam system with a unit in Mode 1 or 2. As a result, the steam supply for gland sealing was transferred from the main steam system to the auxiliary steam system with Unit 4 in Mode 1 resulting in lowering condenser vacuum and subsequent automatic reactor trip on low condenser vacuum.

Description: On May 25, 2014, with Unit 4 operating in Mode 1 at 20 percent power for a shutdown to repair an unrelated equipment issue, two field operators were directed to perform actions in accordance with 4-GOP-103, "Power Operation to Hot Standby," to realign the steam supply to the Unit 4 auxiliary loads from the Unit 4 main steam system to

the Unit 3 auxiliary steam supply system. This required aligning auxiliary steam from Unit 3 to supply the Unit 4 steam jet air ejectors, Unit 4 gland sealing steam, and the Unit 4 condenser air ejector. Gland sealing steam was being supplied by the turbine cylinder heat system which affected the ability of the gland sealing system to compensate for changes in turbine loading. Additionally, condenser vacuum was at 27.9 inches Hg, which is approximately one inch lower than normal due to condenser air in-leakage. As a result of the condenser air in-leakage, the Unit 4 condenser air ejector was in service which placed an additional load on the steam supply system causing a longer period for the auxiliary steam supply control valve to restore pressure. When the steam supply to the gland sealing system was realigned from the main steam system to the auxiliary steam system, it decreased the supply pressure to the gland sealing steam regulating valve and the gland sealing steam system could not maintain adequate sealing steam pressure. Consequently, air was introduced into the condenser through the turbine glands resulting in a rapid lowering of condenser vacuum. The low condenser vacuum trip set point of was reached resulting in an automatic reactor trip. Operators in the control room noted the lowering vacuum but could not respond quickly enough to initiate a manual trip before the automatic trip occurred. Normal reactor decay heat removal by dumping steam to the main condenser was never lost due to the loss of condenser vacuum.

The two operators had been previously briefed by the work control center supervisor to be prepared to realign the steam supply once the unit was offline and if the Main Steam Isolation Valves (MSIVs) were closed. The control room supervisor re-directed the operators to perform the procedural steps for realigning steam loads in 4-GOP-103 prior to meeting those conditions. The licensee entered this issue into their corrective action program as action request 1967899 and conducted a root cause evaluation (RCE). The RCE determined the root cause to be a failure of personnel to adequately address the integrated system status as part of the decision making process used to realign the steam supply to the gland sealing system. The licensee also determined that operating procedure, 4-GOP-103, did not provide adequate direction for what initial conditions were required prior to transferring steam supply to the gland sealing steam system from the main steam system to the auxiliary steam system. The licensee revised the general operating procedure to provide direction that gland sealing steam system supply steam transfer cannot occur in Modes 1 or 2 and they conducted training with all licensed operators on integrated system response in risk-based decision making.

Analysis: The licensee's failure to maintain an adequate procedure for gland sealing steam supply realignment was a performance deficiency. Specifically, the licensee failed to have initial conditions in place in the procedure that provided specific direction that steam supply to the gland sealing system cannot be transferred from the main steam system to the auxiliary steam system with a unit in Mode 1 or 2. The inspectors determined the performance deficiency was more than minor using IMC 0612, Appendix B, Issue Screening (September 7, 2012), because the performance deficiency was associated with the procedure quality attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have specific guidance in procedure 4-GOP-103 that prevented realigning the gland sealing steam supply while in Mode 1 or 2 resulted in

lowering condenser vacuum and subsequent reactor trip on low condenser vacuum when the gland sealing steam supply was attempted to be realigned while Unit 4 was in Mode 1. The inspectors performed an initial screening of the finding using NRC Inspection Manual Chapter (IMC) 0609 Attachment 4 and determined that the finding was a transient initiator contributor which required evaluation using Exhibit 1, "Initiating Events Screening Questions of IMC 0609", Appendix A, "The Significance Determination Process (SDP) for Findings At-Power" (July 19, 2012). The inspectors determined that the finding was of very low safety significance (Green) because the performance deficiency did not result in a reactor trip and loss of mitigating equipment relied upon to transition the plant to a safe shutdown condition. The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure an adequate general operating procedure was available to support nuclear safety (H.1).

Enforcement: Technical Specification 6.8.1 requires that procedures required by the FPL Quality Assurance Topical Report (QATR) are maintained. The QATR includes procedures listed in Appendix A of NRC Regulatory Guide 1.33, Revision 2, dated February 1978, which lists general plant operating procedures to include Operation to Hot Standby. The licensee implements this requirement using procedure 4-GOP-103, Power Operation to Hot Standby. Contrary to the above, the licensee failed to ensure procedure 4-GOP-103 was available and adequate to prevent gland sealing system steam supply realignment while in Modes 1 or 2 resulting in an automatic reactor trip due to low condenser vacuum. The licensee took action to add initial conditions to procedure 4-GOP-103 that would not allow gland seal system steam supply realignment while in Modes 1 or 2. This violation is being treated as a non-cited violation, consistent with Section 2.3.2 of the Enforcement Policy. This violation was entered into the licensee's corrective action program as action request 1967899. (NCV 05000251/2014005-02, Inadequate Procedure to Realign Steam Supply to the Gland Sealing Steam System)

.3 (Closed) Licensee Event Report (LER) 0500025/2014-005-00, Manual Reactor Trip Due to Loss of Instrument Air

On August 11, 2014, Unit 3 was manually tripped from 100 percent reactor power due to a loss of instrument air pressure. The running instrument air compressor was inadvertently unloaded by the plant operator and the standby compressors started but did not load and pressurize the air header due to a latent system design problem associated with the compressor digital control logic software. During the event, the operators believed a leak was present in the containment building and isolated instrument air to the containment building resulting in a loss of reactor coolant system (RCS) letdown and pressurizer spray control. The pressurizer level and reactor coolant system pressure increased. Pressure increased to approximately 2310 psig when power-operated relief valve (PORV) 455C cycled open and closed several times. The operating crew initiated a controlled cool down to assist in maintaining pressurizer level. Safety injection could not be blocked because RCS pressure remained above the 2000 psig permissive set point. When RCS temperature reached approximately 470 degrees F, an automatic safety injection actuation occurred as a result of the engineered safety feature (ESF) actuation system main steam line high differential pressure conditions

being met. Injection into the RCS did not occur since pressure remained higher than the discharge pressure of the high head safety injection and residual heat removal pumps. The inspectors reviewed the LER to verify its accuracy, completeness, and associated corrective actions taken or planned. This LER is closed.

a. Inspection Scope

In addition to reviewing the LER, the inspectors reviewed the licensee's root cause evaluation (RCE), Unit 3 technical specifications, and the post trip review (PTR) restart report. The inspector's verified the timeline of events associated with the LER and the immediate and subsequent corrective actions taken by the licensee to address the issue.

b. Findings

Failure to Perform an Adequate Design Verification

Introduction: A Green self-revealing finding was identified for the licensee's failure to verify the adequacy of the control system during modifications that were performed on the Unit 3 and Unit 4 instrument air compressors. The design verification was necessary to ensure that the standby diesel-driven air compressors would load and pressurize the instrument air header following a loss of instrument air pressure.

Description: In 2013, the licensee completed modifications to the Unit 3 and Unit 4 instrument air systems that included engineering change (EC) 246991 and EC 246990. The modifications included one motor-driven compressor and one standby diesel-driven compressor for each unit with the diesel-driven compressors designed to operate in a standby mode with the capability to start and load on a lowering pressure condition to prevent losing instrument air pressure. On August 11, 2014, Unit 3 was manually tripped from 100 percent reactor power due to a loss of instrument air. The running motor-driven instrument air compressor was unloaded by the plant equipment operator in error. Upon depressurization of the instrument air system, the standby diesel-driven compressors started but did not load and pressurize the air header as designed. Following the event on August 11, 2014, the licensee determined that a latent design flaw existed in the standby compressor control logic that allowed the compressors to start but not load and pressurize the air header on a lowering pressure condition. The licensee found that the standby diesel-driven compressors failed to load because of a software design condition that existed where a load permissive signal was erroneously programmed into the control logic that prevented the compressor from loading unless the compressor cooling fan was running. The running cooling fan was required to satisfy a permissive signal in the operating logic. The inspectors determined that the licensee did not perform an adequate design verification review of the diesel-driven instrument air compressor control logic in accordance with quality instruction ENG-QI-1.7, "Nuclear Engineering Design Input Verification," Section 5.3, "Design Qualification," to ensure the new instrument air system would function properly under all conditions. Corrective actions included an immediate modification to the standby compressor loading control circuit to ensure the machine would load automatically and revising general procedural guidance for compressor operation. Additional corrective actions included establishing a new required level of review and verification for vendor related digital modifications, and

a review of all digital modifications performed by an external design organization in the past five years to determine if similar latent design issues exist.

The licensee entered this finding in their corrective action program as action request 01983607 and performed a root cause evaluation. The licensee's root cause evaluation focused on what caused the loss of instrument air pressure. The licensee evaluation for the loss of instrument air event determined the root causes of the event to be: 1) a latent design error with the diesel-driven instrument air compressor control logic that prevented the compressor from loading, and 2) the design error was not identified or corrected by FPL Nuclear Projects Engineering (NPE) due to an overreliance on the design vendor to provide a complex digital modification.

Analysis: The licensee's failure to perform an adequate design verification of control system function for modifications performed on the Unit 3 and 4 instrument air compressor systems was a performance deficiency. Specifically, instrument air compressor modifications EC 246991 and EC 246990 were accepted and placed into service by the licensee without verification that the control logic configuration would function properly and load the air compressor under design conditions. The inspectors determined the performance deficiency was more than minor using IMC 0612, Appendix B, "Issue Screening," (September 7, 2012) because the performance deficiency was associated with the design control attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during power operations. Specifically, the failure to have an adequate design for controlling the operation of the standby instrument air compressor resulted in a manual reactor trip due to the loss of instrument air pressure. The inspectors screened the issue under the initiating events cornerstone using Attachment 4 (June 19, 2012) and Exhibit 1 (June 19, 2012) of Appendix A to IMC 0609, "Significance Determination Process" (June 2, 2011). The inspectors concluded that a detailed risk evaluation would be required because the finding was associated with the loss of a support system that resulted in a reactor trip and affected equipment that could be used by plant operators to mitigate the resulting plant transient. A senior reactor analyst (SRA) performed a detailed risk evaluation of this issue. The NRC model for Turkey Point was adjusted by: 1) increasing the initiating event frequency for a loss of instrument air (LOIA) event by one order-of-magnitude, and 2) the failure-to-run probability of the backup air compressors was set equal to 1.0. The change in core damage frequency results were below the 1E-6 threshold and the issue was determined to be of very low risk significance (Green). The finding was associated with a cross-cutting aspect in the resources component of the human performance area because the licensee failed to ensure instrument air system equipment was available and adequate to support nuclear safety (H.1).

Enforcement: This finding does not involve enforcement action because the design verification issue was associated with the non-safety related diesel-driven air compressors and no violation of a regulatory requirement was identified. The licensee entered this issue into the corrective action program as AR 1983607. Because this finding does not involve a violation and is of very low safety significance, it is identified as FIN 05000250, 251/2014005-03, Failure to Perform an Adequate Design Verification.

Failure to Fully Implement Emergency Operating Procedure 3-EOP-ES-0.1, Reactor Trip Response

Introduction: A Green self-revealing non-cited violation (NCV) of TS 6.8.1, Procedures, was identified when the licensee failed to fully implement procedure 3-EOP-ES-0.1, "Reactor Trip Response." Specifically, the licensee failed to take effective action to implement Step 25 of 3-EOP-ES-0.1 and maintain pressurizer pressure and level within their required bands in order to stabilize plant conditions following a loss of instrument air and a reactor plant trip.

Description: On August 11, 2014, Unit 3 was manually tripped from 100 percent reactor power due to a loss of instrument air pressure. Operators isolated instrument air to the Unit 3 containment building per 0-ONOP-013, "Loss of Instrument Air," in response to indications that the reduction in air pressure was due to a leak inside containment. Operators manually tripped the reactor when instrument air pressure continued to drop below 65 psig as required by procedure 0-ONOP-013. Following the reactor trip, the control room operators entered procedures 3-EOP-E-0, "Reactor Trip" followed by 3-EOP-ES-0.1, "Reactor Trip Response." Without instrument air, the air operated pressurizer spray and chemical volume control system let down valves failed closed as designed. This caused pressurizer level and pressure to increase. The bands for stable plant conditions were pressurizer level between 20 to 30 percent and pressurizer pressure between 2220 to 2250 psig. To control pressure and level, the operating crew initially reduced the 3A charging pump demand to a minimum, which tripped the pump. The 3B charging pump was started, but the operating crew was reluctant to drive the pump to minimum demand based on the response of the 3A pump. The licensee determined the crew did not reduce charging flow because they did not want to risk tripping the 3A pump and reducing reactor coolant pump seal flow. Pressurizer level and pressure continued to increase to approximately 92 percent and 2310 psig respectively. The increased pressure caused power operated relief valve 3-455C to cycle open and closed multiple times to prevent an over pressure condition. The operating crew elected to initiate a reactor plant cool down in accordance with procedure 3-GOP-305, "Hot Standby to Cold Shutdown," to assist in lowering pressurizer level to prevent filling it solid. The safety injection actuation signal could not be blocked during the cool down because RCS pressure remained above the 2000 psig block permissive set point. During the cool down, when RCS temperature reached approximately 470 degrees F, an automatic safety injection actuation occurred as a result of the engineered safety feature (ESF) actuation system main steam line high differential pressure conditions being met. Injection into the RCS did not actually occur since pressure remained higher than the discharge pressure of the high head safety injection and residual heat removal pumps.

The licensee's root cause evaluation focused on what caused the valid safety injection following the loss of instrument air and manual reactor trip. The licensee's evaluation for the valid ESF safety injection event determined the root cause to be inadequate guidance in 0-ONOP-013, "Loss of Instrument Air," for response to a loss of air-operated valves in the containment building. The licensee also determined a contributing cause of the event was ineffective operator implementation of Step 25 of 3-EOP-ES-0.1 to maintain pressurizer pressure and level within their required bands in order to stabilize

plant conditions following the loss of instrument air and reactor plant trip. The inspectors concluded that there was a lack of operator awareness that the reactor coolant pump seals were designed so that seal flow could be lost for short periods of time without damage and this contributed to the operator's reluctance to take action to minimize charging flow. The inspectors also noted that there were other options available to the operating crew that would have helped stabilize pressurizer pressure and level without the loss of reactor coolant pump seal flow. Following the event, the licensee implemented corrective actions which included providing training to all licensed operators on maintaining stable plant conditions when implementing EOP-ES-0.1, "Reactor Trip Response," with a loss of instrument air.

Analysis: The licensee's failure to implement Step 25 of 3-EOP-ES-0.1 to maintain pressurizer pressure and level within their required bands in order to stabilize plant conditions following a loss of instrument air and a reactor plant trip was a performance deficiency. The performance deficiency resulted in lifting a pressurizer power operated relief valve and a valid safety injection actuation signal. The performance deficiency was more than minor because it was associated with the human performance attribute of the initiating events cornerstone and adversely affected the cornerstone objective to limit the likelihood of events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. The inspectors screened the issue under the initiating events cornerstone using Attachment 4 (June 19, 2012) and Exhibit 1 (June 19, 2012) of Appendix A to IMC 0609, "Significance Determination Process" (June 2, 2011). The inspectors concluded that a detailed risk evaluation would be required because the finding was associated with a transient initiator and operator actions to utilize equipment to mitigate the associated plant transient. A senior reactor analyst (SRA) performed a detailed risk evaluation of this issue. The NRC model for Turkey Point was adjusted by setting the failure probability of the PORV to remain closed during an event equal to 1.0. This represented the impact of failing to follow the emergency operating procedures resulting in lifting the PORVs during the event. The delta-CDF results were below the 1E-6 threshold and the issue was thus determined to be of very low risk significance (Green). This finding was associated with a cross-cutting aspect in the training component of the human performance area because the licensee failed to ensure licensed operator training provided knowledge that the reactor coolant pump seals could operate for a short period of time without seal flow (H.9).

Enforcement: Technical Specification 6.8.1 requires, in part, that procedures required by the FPL Quality Assurance Topical Report (QATR) be implemented. The QATR includes procedures listed in Appendix A of NRC Regulatory Guide 1.33, Revision 2, dated February 1978, which includes procedures for combating emergencies or other significant events. The licensee implements this requirement, in part, through procedure 3-EOP-ES-0.1, "Reactor Trip Response." Step 25 of 3-EOP-ES-0.1 required operators to maintain stable plant conditions with pressurizer level between 20 to 30 percent and pressurizer pressure between 2220 to 2250 psig. Contrary to this requirement, the licensee did not maintain stable plant conditions and pressurizer level reached 92 percent and pressure reached 2310 psig. This violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy, because it was of very low

safety significance and was entered in the licensee's corrective action program as AR 01983618. (NCV 05000250/2014005-04, Failure to Fully Implement Emergency Operating Procedure 3-EOP-ES-0.1, Reactor Trip Response)

4OA5 Other Activities

.1 Independent Spent Fuel Storage Facility (ISFSI) Walk down

a. Inspection Scope

On December 11, 2014, the inspector conducted a walk down of the ISFSI protected area per inspection procedure 60855.1, "Operation of an ISFSI at Operating Plants." The inspectors observed the passive ventilation system to be free of any obstruction allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and radiation protection access controls to the ISFSI area to be satisfactory.

b. Findings

No findings were identified.

.2 (Closed) Temporary Instruction 2515/189, Inspection to Determine Compliance of Dynamic Restraint (Snubber) Program with 10 CFR 50.55a Regulatory Requirements for Inservice Examination and Testing of Snubbers

a. Inspection Scope

The inspectors conducted an onsite review of the implementation of the licensee's snubber program, in accordance with Temporary Instruction (TI) 2515/189, to verify that the program was in compliance with the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a, as discussed in Regulatory Information Summary (RIS) 2010-06, "Inservice Inspection and Testing of Dynamic Restraints (Snubbers)." The inspectors reviewed the licensee's actions taken as a result of RIS 2010-06, which included a self-assessment of the snubber program. The licensee concluded that no action was required as a result of the RIS 2010-006. The inspectors conducted an independent walkdown to evaluate compliance with licensee's program requirements and observed the visual inspection of a selection of five snubbers. The inspectors reviewed the methodology for the snubber population selection and selected six snubbers to review based on risk-informed insights, performance history, plant conditions, snubber classification, and accessibility to verify the visual examination of the selected snubbers was performed as stated by the licensee's technical specifications during the current 10-year interval. For the selected snubbers, the inspectors reviewed the visual test records during the current 10-year Inservice Inspection (ISI) interval to verify that these activities were in accordance with the licensee's TSs. The inspectors also observed in-process bench testing of one of the selected snubbers, and verified that the test parameters met the acceptance criteria specified in the procedure. The inspectors reviewed the process for snubber service-life monitoring and determined that the selected snubbers were being monitored and maintained. Additionally, the

inspectors verified that the current, as well as a sample of past degraded or non-conforming conditions, were properly identified and corrected in accordance with the licensee's corrective action program.

b. Findings

No findings were identified. A Severity Level IV licensee-identified violation is documented in Section 4OA7 of this report.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Kiley and other members of licensee management on January 8, 2015. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

4OA7 Licensee-Identified Violations

The following Severity Level IV (SL-IV) violation was identified by the licensee, and was a violation of NRC requirements which meet the criteria of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation (NCV).

Title 10 CFR 50.55a g (5) (ii), states, in part, that if a revised ISI program for a facility conflicts with the TS for the facility, the licensee shall apply to the Commission for amendment of the TSs to conform the TS to the revised program. Contrary to the above, from February 22, 2004, to October 03, 2014, the licensee failed to apply to the Commission for an amendment of the TSs when the revised ISI program for Turkey Point, Units 3 and 4, conflicted with the TS for the facility. Specifically, TS 3/4.7.6, "Snubbers," conflicted with the revised ISI program for dynamic restraints (snubbers) because the TS did not reflect the latest American Society of Mechanical Engineers (ASME) Code of record for the current (Fourth) ISI interval (ASME Section XI, 1998 Edition with 2000 Addenda). This violation was dispositioned through the traditional enforcement process because the failure to submit a TS amendment impacted a regulatory process in that, the NRC was not able to perform its regulatory function in determining the adequacy of a licensed activity. This violation was determined to be of Severity Level IV because it is consistent with Example 6.1.d.3 in the NRC Enforcement Policy (revised July 9, 2013), "Reactor Operations." As a result of a self-assessment, this violation was entered in the licensee's CAP as AR 01984462.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

G. Alexander, Fleet Programs
F. Banks, Quality Manager
C. Cashwell, Radiation Protection Manager
P. Czaya, Licensing
C. Domingos, Engineering Director
S. Fox, Snubber Program Owner
M. Jones, System Engineering Manager
A. Katz, Maintenance Manager
M. Kiley, Site Vice-President
R. Margolis, Fleet Programs
S. Mihalakea, Licensing
J. Noble, Boric Acid Program
N. Rios, Chemistry Manager
D. Slivon, ISI
D. Sluzka, Work Controls Manager
R. Smith, Engineering
B. Stamp, Training Manager
R. Tomonto, Licensing Manager
M. Wayland, Operations Director

NRC personnel:

B. Davis, RII Senior Project Engineer, Division of Reactor Projects
M. Endress, Resident Inspector, Division of Reactor Projects
J. Hanna, RII Senior Reactor Analyst, Division of Reactor Projects
T. Hoeg, Senior Resident Inspector, Division of Reactor Projects
A. Klett, NRR Project Manager, Division of Operating Reactor Licensing
D. Mas, Resident Inspector, Division of Reactor Projects (Acting)

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000250/2014005-01	NCV	Non-Compliance with HRA Entry Requirements (Section 2RS1)
05000251/2014005-02	NCV	Inadequate Procedure to Realign Steam Supply to the Gland Sealing Steam System (Section 4OA3.2)

05000250, 251/2014005-03	FIN	Failure to Perform an Adequate Design Verification (Section 4OA3.3)
05000250/2014005-04	NCV	Failure to Fully Implement Emergency Operating Procedure 3-EOP-ES-0.1, Reactor Trip Response (Section 4OA3.3)
<u>Closed</u>		
05000250/2014-003-00	LER	Manual Actuation of the Reactor Protection System Due to Failure of Group Step Counter (Section 4OA3.1)
05000251/2014-002-00	LER	Automatic Actuation of the Reactor Protection System Due to Low Main Condenser Vacuum (Section 4OA3.2)
05000250/2014-005-00	LER	Manual Reactor Trip Due to Loss of Instrument Air (Section 4OA3.3)
05000250, 251/2515/189	TI	Inspection to Determine Compliance of Dynamic Restraint (Snubber) Program with 10 CFR 50.55a, "Regulatory Requirements for Inservice Examination and Testing of Snubbers" (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

Condition Reports

01993576	01908075	01942015	02000379	02006800
01997301	01821189	01959769	02000346	02006152
01920669	01720828	01954320	02008430	02006054
01988566	01732977	01834676	02008340	02006035
02014897	01884932	01982382	02008331	02004049
02014877	01968296	02002073	02008297	02004074
02009231	01991191	02002012	02007117	02004082
02002236	01993898	02001189	02006910	02003834
02002056	02002057	02001115	02006872	02003475
01998690	01998556	02014320	02015046	

1R04 Equipment Alignment

P&ID 5613-M-3022, Emergency Diesel Engine and Oil System
 4-NOP-023, Emergency Diesel Generator
 4-NOP-022, Emergency Diesel Generator Fuel Oil System
 3-NOP-023, Emergency Diesel Generator
 3-NOP-022, Emergency Diesel Generator Fuel Oil System
 P&ID 5613-M-3019, Intake Cooling Water System

1R05 Fire Protection

0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions

1R08 Inservice Inspection Activities**Licensee Identified Corrective Action Documents As a Result of this Inspection**

Action Report (AR) 01994996, Turkey Point (TP) Unit-4, Boric Acid Evaluation, Reactor Head Nozzle #59, 9/30/2014

AR 01995754, TP-Unit-4, Incomplete thread engagement on wall plates, and inconsistent gaps identified between CRDM/ Rod Position Indication (RPI) plates and seismic plate bumper screw adjustment pads, 10/2/14

NRC Identified Corrective Action Documents As a result of this Inspection

AR 01995095, TP Unit-4, Scaffold Not Built in Accordance with Procedure, 10/1/2014

AR 02016779, Unit-3, CRDM Seismic Support Assembly, 1/7/15

Corrective Action Documents

Action Reports (ARs) No's. 01995637, 01995385, 01965050, 01967938, 01967936, 01991897, 01862725, 01832447-01, 01994996, 01995754, 01995095, 02016779, 1994295, 1995385

Calculations

6 CS 20323, Turkey Point Power Plant Extended Power Uprate, CRDM Pressure Housing Assembly, Appurtenances ASME III Class 1, Design Report Addendum 2, 12/21/09

Drawings

5610-P-246, Turkey Point Nuclear Power Plant unit-4, High Heed Safety injection Pump Recirculation Test Lines, Rev. 2

5614-M-4000, Turkey Point Nuclear Unit-4, Reactor Pressure Vessel 4T237 Weld Layout, Rev. 3

5610-M-465-7, Sht. 10, Turkey Point Nuclear Power Plant Unit-4, Assembly, Seismic Lug, NE, Rev. 0

5610-M-465-7, Sht. 11, Turkey Point Nuclear Power Plant Unit-4, Assembly, Seismic Lug, SW, Rev. 0

5610-M-465-7, Sht. 12, Turkey Point Nuclear Power Plant Unit-4, Assembly, Seismic Lug, SE, Rev. 0

5610-M-465-7, Sht. 13, Turkey Point Nuclear Power Plant Unit-4, Assembly, Seismic Lug, NW, Rev. 0

Other Documents

Reactor Vessel Closure Head, (RVCH) Penetration UT Data Sheet, Penetration ID No.1, 9/29/14

RVCH Penetration UT Data Sheet, Penetration ID No.59, 9/29/14
RVCH Penetration UT Data Sheet, Penetration ID No.67, 9/28/14
NDE Summary No. 256802, Liquid Penetrant Examination Data Sheet, for Weld 2"-SI-2401-1, 3/25/2002
NDE Summary No. 256802, Liquid Penetrant Examination Data Sheet, for Weld 2"-SI-2401-1, 9/30/2014
NDE Summary No. 044025, General Inspection Report RPV Head Penetrations – Nozzle 59, 10/5/2014
NDE Summary No. 044300, U-4 CRDM Structural Support Assembly, Tie Rods, Support Ring and Support Plates, 9/22/2014
NDE Summary No. 257132, UT-Elbow to Pipe Weld, 4"-SI-2401-51, 10/4/14
NDE Summary No. 279050, VT-3, Item No. 78102B-H-423-17, Double Acting Restraint, Steam Generator "A" Blowdown Outside Containment, 11/9/12
NDE Summary No. 061500, UT-Pipe to Pipe Weld, 27.5"-RCS-1409-12,10/4/14
LMT-QA-46, Curtis Wright, Personnel Certification Statement for PT Examiner, 8/13/2014
LMT Areva Certificate of Personnel Qualification, ID No. H9017, Head Penetration UT Examiner, 8/18/11
LMT-QA-46, Curtis Wright, Personnel Certification Statement for UT Examiner, 9/1/14
LMT-QA-46, Curtis Wright, Personnel Certification Statement for UT Examiner, 3/24/14
LMT-QA-46, Curtis Wright, Personnel Certification Statement for VT Examiner, 8/8/14
Areva Certificate of Personnel Qualification, ID No. B4612, UT Level III Examiner, 12/5/13
Areva Certificate of Personnel Qualification, ID No. C5341, UT Level II Examiner, 12/15/11
Areva Certificate of Personnel Qualification, ID No. H9017, Head Penetration UT Examiner, 8/18/11
PTN-4, Data Sheet 4.3-037, VT-3, Visual Examination Record for U-4 CRDM Structural Support Assembly, tie Rods, Support Ring, and Support Plates, 9/24/14
PTN-4, Data Sheet 4.3-044, VT-3, Visual Examination Record for U-4 CRDM Structural Support Assembly, tie Rods, Support Ring, and Support Plates, 10/3/14
PTN-4, Data Sheet 4.3-047, VT-3, Visual Examination Record for U-4 CRDM Structural Support Assembly, tie Rods, Support Ring, and Support Plates, 10/13/14
Turkey Point Nuclear Plant (PTN), Section XI Category Summary, Fourth Interval, 9/24/2014
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LIST OF ACRONYMS AND ABBREVIATIONS

ALARA	As Low As Reasonably Achievable
AR	Action Request
BACCP	Boric Acid Corrosion Control Program
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
EAL	Emergency Action Level
ECC	Emergency Containment Cooler
EDG	Emergency Diesel Generator
EP	Emergency Preparedness
FME	Foreign Material Exclusion
FSAR	Final Safety Analysis Report
GOP	General Operating Procedure
HHSI	High Head Safety Injection
HPT	Health Physics Technician
HRA	High Radiation Area
IAC	Instrument Air Compressor
ISFSI	Independent Spent Fuel Storage Installation
IST	Inservice Testing
NAP	Nuclear Administrative Procedure
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
ODCM	Offsite Dose Calculation Manual
OE	Operating Experience
PI	Performance Indicator
Radwaste	Radioactive Waste
RCA	Radiologically Controlled Areas
RTP	Rated Thermal Power
REMP	Radiological Environmental Monitoring Program
RG	Regulatory Guide
SRA	Senior Risk Analyst
TS	Technical Specifications
PI	Performance Indicator
RHR	Residual Heat Removal
RPS	Reactor Protection System
U3	Unit 3
U4	Unit 4
UFSAR	Updated Final Safety Analysis Report
VUHP	Vessel Upper Head Penetration
WO	Work Order