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

July 31, 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 05000250/2015002, 05000251/2015002

Dear Mr. Nazar:

On June 30, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Nuclear Generating Station Units 3 and 4. On July 9, 2015, the NRC inspectors discussed the results of the inspection with Mr. Tom Summers and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one self-revealing finding of very low safety significance (Green) in this report. The finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or significance of this NCV, 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 Turkey Point Nuclear Generating Station Units 3 and 4.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the Regional Administrator, Region II; and the NRC resident inspector at the Turkey Point Nuclear Generating Station Units 3 and 4.

In accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 2.390 of the NRC's "Agency Rules of Practice and Procedure," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's Agencywide Document 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/

LaDonna B. Suggs, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure:
IR 05000250/2015002, 05000251/2015002,
w/Attachment: Supplementary Information

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ADAMS: ☒ Yes ACCESSION NUMBER: ML15212A695 ☒ SUNSI REVIEW COMPLETE ☒ FORM 665 ATTACHED

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SIGNATURE	TLH4	MXE2	AAV	REW1	LJB4		
NAME	T. Hoeg	M. Endress	A. Vargas	R. Williams	L. Suggs		
DATE	7/27/2015	7/ 27/2015	7/27/2015	7/30/2015	7/30/2015		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO		

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Letter to Mano Nazar from LaDonna B. Suggs dated July 31, 2015.

SUBJECT: TURKEY POINT NUCLEAR GENERATING STATION - NRC INTEGRATED INSPECTION REPORT 05000250/2015002, 05000251/2015002

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-250, 50-251
License Nos:	DPR-31, DPR-41
Report Nos:	05000250/2015002, 05000251/2015002
Licensee:	NextEra Energy
Facility:	Turkey Point Nuclear Generating Station, Units 3 & 4
Location:	9760 S. W. 344th Street Homestead, FL 33035
Dates:	April 1 to June 30, 2015
Inspectors:	T. Hoeg, Senior Resident Inspector M. Endress, Resident Inspector
Approved by:	LaDonna B. Suggs, Chief Reactor Projects Branch 3 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000250/2015002, 05000251/2015002; 04/01/2015 – 6/30/2015; Turkey Point Nuclear Generating Station, Units 3 & 4; Event Follow-up.

The report covered a three-month period of inspection by the resident inspectors. One Green non-cited violation was identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated April 29, 2015. The cross-cutting aspects were determined using IMC 0310, "Aspects 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 February 4, 2015. 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 adequate guidance in procedure 4-GOP-103, "Power Operation to Hot Standby." Specifically, 4-GOP-103 did not contain adequate instructions to control reactor power prior to opening the reactor trip breakers in order to minimize steam generator inventory loss to prevent an auxiliary feed water (AFW) system actuation. As a result, the AFW actuation system (AFAS) actuated unexpectedly during a planned unit shutdown resulting in an excessive reactor coolant system cool down and the operators closing the main steam isolation valves. Corrective actions included entering this issue into their corrective action program (CAP) and revising the procedure to reduce reactor power to at least 20 percent to prevent steam generator inventory loss due to shrinkage following a manual reactor trip during a planned reactor plant shutdown from power operations to hot standby.

  The performance deficiency was more than minor because it is 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 shutdown as well as power operations. Specifically, the failure to have specific guidance in procedure 4-GOP-103 to ensure reactor power is lowered to at least 20 percent prior to initiating a manual reactor trip during a planned shutdown resulted in an inadvertent AFAS actuation, reactor coolant system cool down, closing of the main steam isolation valves, and a reduced safe shutdown margin. The inspectors screened the finding using IMC 0609, Appendix A, "The Significance Determination Process for Findings at Power," Exhibit 1, "Initiating Events Screening Questions."

The inspectors determined that this finding was of very low safety significance (Green) because the finding did not cause a reactor trip and the loss of mitigation equipment relied upon to transition the plant from the onset of the trip to a stable 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 4OA3).

Licensee Identified Violations

None

REPORT DETAILS

Summary of Plant Status

Unit 3 began this inspection period at 100 percent of Rated Thermal Power (RTP) where it remained until April 30, 2015, when it entered Mode 3 for planned maintenance on the 3C normal containment cooler. Unit 3 was restarted May 3, 2015, and returned to 100 percent of RTP on May 5, 2015, where it remained through the end of this inspection period.

Unit 4 began this inspection period at 100 percent of RTP where it remained until May 8, 2015, when it was shut down for a planned maintenance outage on the normal containment coolers. Unit 4 was restarted on May 11, 2015, and returned to 80 percent RTP on May 12, 2015, when the unit automatically tripped due to a main turbine generator differential current signal. Unit 4 was restarted on May 14 and returned to 100 percent of RTP on May 15, 2015, where it remained through the end of this inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

.1 Hurricane and Summer Seasonal Readiness Preparations

a. Inspection Scope

During the months of May and June, the inspectors reviewed and verified the status of licensee actions taken in accordance with their procedural requirements prior to the onset of hurricane season. The inspectors reviewed Turkey Point procedure 0-ADM-116, “Hurricane Season Readiness,” and OP-AA-102-1002, “Seasonal Readiness for completion.” The inspectors performed site walk downs of the systems or areas listed below to determine if the licensee had made the required preparations in accordance with their procedures. Action Request reports (ARs) were reviewed to determine if the licensee was identifying and resolving conditions associated with adverse weather preparedness. This inspection constitutes one AC power systems sample and one seasonal extreme weather conditions sample.

- Switchyard and Startup Transformer AC systems (AC Systems Sample)
- Unit 3 and Unit 4 intake cooling water structures
- Unit 3 and Unit 4 component cooling water (CCW) systems
- Unit 3 and Unit 4 intake cooling water (ICW) systems
- Unit 3 and Unit 4 turbine and auxiliary buildings

b. Findings

No findings were identified.

.2 External Flooding Preparations

a. Inspection Scope

Throughout the month of June, 2015, the inspectors performed walkdown inspections of Unit 3 and Unit 4 reactor auxiliary buildings, including doors, flood protection barriers, penetrations and the integrity of the perimeter structure. The inspectors verified the licensee had implemented surveillance procedure 0-SMM-102.1, "Flood Protection Stop Log and Penetration Seal Inspection," to assure that vulnerabilities had been identified and evaluated by the licensee. In addition, the Inspectors walked down the Unit 3 and Unit 4 emergency diesel generators (EDG) and fuel oil tanks, auxiliary feedwater (AFW) pump areas and the turbine buildings. The inspectors also reviewed the applicable Updated Final Safety Analysis Report (UFSAR) sections, TSs, and other licensing basis documents regarding external flooding and flood protection, including specific plant design features to mitigate the maximum flood level. CAP documents and work orders (WO) related to actual flooding or water intrusion events over the past year were also reviewed by the inspectors to ensure that the licensee was identifying and resolving severe weather related issues that caused or could lead to external flooding of safety related equipment. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walk Downs (Quarterly)

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. Documents reviewed are listed in the Attachment. This inspection constitutes three samples.

- 4B EDG while 4A EDG was out of service (OOS)
- 4B containment spray pump while the 4A containment spray pump was OOS
- B and C AFW pumps while the A AFW pump 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, 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 inspectors routinely reviewed the licensee's fire impairment lists and monitored the associated corrective actions for completion. The inspectors reviewed the action request report database to verify that fire protection problems were being identified and appropriately resolved in the CAP. The inspectors' tours of the selected areas verified the fire protection equipment was installed as shown on the applicable fire plan drawings and appeared functional and ready for usage. This inspection constitutes five samples. The following areas were inspected:

- Unit 4 steam generator feed pump area, Fire Zone 066
- Unit 4 steam generator feed pump area, Fire Zone 069
- Unit 3 condensate storage tank area, Fire Zone 089
- Unit 3 3A vital battery room, Fire Zone 103
- Unit 3 3B vital battery room, Fire Zone 110

b. Findings

No findings were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

On June 17, 2015, the inspectors observed an unannounced fire drill that took place within the station power block in the Outside Machine Shop building. The drill was observed to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the drill debrief meeting and took appropriate corrective actions as required. Specific attributes evaluated were: (1) proper wearing of fire protective gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate fire-fighting techniques; (4) sufficient fire-fighting equipment brought to the scene; (5) effectiveness of command and control; (6) search for victims and propagation of the fire into other plant areas; (7) smoke removal operations; (8)

utilization of pre-planned strategies; (9) adherence to the pre-planned drill scenario; and (10) drill objectives. The inspectors also observed the operation of a fire hydrant and charging of fire hoses in the open lot area adjacent to Outside Machine Shop building. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program

Resident Inspector Quarterly Review

.1 Simulator Observations

a. Inspection Scope

The inspectors performed the following inspection sample of a simulator observation and assessed licensed operator performance while training. These observations included procedural use and adherence, response to alarms, communications, command and control, and coordination and control of the reactor plant operations.

On May 27, 2015, the inspectors assessed licensed operator performance in the plant-specific simulator during a training evolution. The training scenario was started with the unit in Mode 1 at 100 percent of rated thermal power. The training scenario began with a seal leak on the 3B reactor coolant pump followed by a tube leak on the 3B steam generator. The steam generator tube leak required a fast turbine load reduction followed by a reactor trip. Following the reactor trip, a loss of off-site power occurred followed by a tube rupture on the 3B steam generator.

During this simulator observation, the simulator board configurations were compared with actual plant control board configurations reflecting recent plant changes or modifications. This inspection constitutes one sample. The inspectors specifically evaluated the following attributes related to operating crew performance and the licensee evaluation:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of off-normal and emergency operating procedures and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by shift supervisor, including ability to identify and implement appropriate TS actions and emergency plan classification and notification
- Crew overall performance and interactions
- Evaluator’s control of the scenario and post scenario evaluation of crew performance

b. Findings

No findings were identified.

.2 Control Room Observations

a. Inspection Scope

The inspectors performed daily assessments of licensed operators in the control room during their performance of routine operations. These observations included daily surveillance testing and log keeping, response to alarms, communications, shift turnovers, and coordination of plant activities. These observations were conducted to verify operator compliance with station operating guidelines, such as use of procedures, control and manipulation of components, and communications. The inspectors also performed the following focused control room observations during reactivity manipulations and mode changes:

On April 30, 2015, the inspectors performed a focused observation on Unit 3 during a planned reactor plant shutdown to Mode 3 per 3-NOP-103, "Power Operation to Hot Standby." The inspectors observed the pre-evolution operating crew brief, turbine load reduction, manual reactor trip, and control of the secondary plant to remove decay heat from the reactor coolant system.

On May 3, 2015, the inspectors performed a focused observation on Unit 3 during a reactor startup per procedure 3-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 observed reactor startup. The inspectors reviewed the recorded reactor startup physics data to ensure it was as calculated by the licensee reactor engineering staff.

On May 14, 2015, the inspectors performed a focused observation on Unit 4 during a 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 observed reactor startup. The inspectors reviewed the recorded reactor startup physics data to ensure it was as calculated by the licensee reactor engineering staff.

This inspection constitutes three samples. The inspectors focused on the following conduct of operations attributes as appropriate:

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed known equipment problems associated with the Nuclear Instrumentation Source Range Detectors for Units 3 and 4 and FCV-4-114A, Primary Water (PW) to Blender Flow Control Valve, affecting the maintenance rule program and equipment performance history trends associated with the equipment. Specifically, the inspectors reviewed action requests 02046555 and 02026941.

The inspectors reviewed the licensee's activities to meet the requirements of 10 CFR 50.65, "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," and licensee procedure NAP-415, "Maintenance Rule Program Administration." The inspectors focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of a(1) or a(2) performance criteria classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed or reviewed corrective maintenance activities. The inspectors verified that equipment problems were being identified and appropriately entered into the licensee's CAP. The inspectors used the licensee maintenance rule database, system health reports, maintenance rule unavailability status reports, and the CAP as sources of information on tracking and resolution of issues. This inspection constitutes three samples.

- Unit 3 Nuclear Instrumentation Source Range Detectors
- Unit 4 Nuclear Instrumentation Source Range Detectors
- Unit 4 PW to Blender Flow Control Valve, FCV-4-114A

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews and control room inspections of the licensee's risk assessment of six emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, "Industry Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants," Revision 3; and procedures 0-ADM-068, "Work Week Management;" WM-AA-1000, "Work Activity Risk Management;" and O-ADM-225,

"On Line Risk Assessment and Management." The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment and the licensee assessment of aggregate risk using procedure OP-AA-104-1007, "Online Aggregate Risk." The inspectors discussed the on-line risk monitor (OLRM) results with the control room operators and verified all applicable out-of-service equipment was included in the OLRM calculation. The inspectors evaluated the following six risk assessment samples during the inspection period:

- 3B EDG, B AFW Pump, and 3C ICW Pump OOS
- 4B EDG, 4C Charging Pump, and 4B CCW Pump OOS
- 4B High Head Safety Injection (HHSI) Pump, 4B EDG, and 4B Residual Heat Removal (RHR) Pump OOS
- 4B CCW Heat Exchanger, 4B EDG, and 4C ICW Pump OOS
- 4A EDG, 4A HHSI Pump, and AFW Train 1 OOS
- C AFW Pump, 3-455C Power Operated Relief Valve OOS, and 3B Charging Pump OOS

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors evaluated the technical adequacy of the licensee evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred for the six operability evaluations described in the ARs listed below. The inspectors reviewed applicable sections of the UFSAR to determine if 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 affected equipment remained capable of performing its intended design function. The inspectors also reviewed a sampling of condition reports to verify that the licensee was routinely identifying and correcting any deficiencies associated with operability evaluations. This inspection constitutes six samples.

- AR 02038106, 3B Emergency Diesel Generator Air Start Check Valve Leakage
- AR 02038586, B Auxiliary Feedwater Turbine Thrust Bearing Out of Specification
- AR 02045114, Unit 3 N-32 Source Range Nuclear Instrument Missed Technical Specification Surveillance
- AR 02047817, Coolant Leak from the 3B Emergency Diesel Generator
- AR 02054667, Unit 3 Pressurizer Power Operated Relief Valve (PORV) Intermediate Position Indication When Trying to Close
- AR 2011075, Auxiliary Building Concrete Degradation

b. Findings

No findings were identified.

1R18 Plant Modifications

Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed the permanent plant modifications to the AFW Train A and Train B pump discharge lines associated with the Fukushima FLEX initiative. The modification installed additional welded flange connections on the AFW pump discharge lines. The installation allowed an additional water source to be connected to the steam generators to support reactor core cooling during a beyond design basis external event. 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, design analyses, and UFSAR documents impacted by this modification and discussed the changes with licensee personnel to verify that the modifications were consistent with the work order and associated documents. The inspectors observed portions of the modification and surrounding area to determine if conditions resulted in any potential unsafe conditions not described in the engineering change documentation. Additionally, the inspectors reviewed and verified that any conditions associated with the modification were being identified and entered into the CAP. This inspection constitutes one sample.

- EC 280631, Auxiliary Feedwater Header Fukushima Modification

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the five post maintenance tests and associated WOs listed below, the inspectors reviewed the test procedures and either witnessed the testing or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was operable. The inspectors verified that the requirements in licensee procedure 0-ADM-737, “Post Maintenance Testing,” were incorporated into the test requirements. The inspectors reviewed the following WOs constituting five inspection samples:

- WO 40270528, B Auxiliary Feedwater Pump Discharge Drain Valve
- WO 40354540, 3C Normal Containment Cooler Fan Belt
- WO 40367947, 3B Emergency Diesel Generator Breaker 3AB20 VMR Relay Replacement
- WO 40084029, 3C Intake Cooling Water Pump Auxiliary Relay 151X Replacement
- WO 40314250, 3B Emergency Diesel Generator Air Check Valve

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 3 Planned Maintenance Outage

a. Inspection Scope

On April 30, 2015, the licensee performed a planned maintenance outage to repair the non-safety related 3C normal containment cooler motor pulley assembly. The fan belts had become dislodged from their pulleys several weeks earlier and the licensee decided to make the necessary repair before the summer months to add margin to containment cooling capacity for summer readiness.

During the outage planning activities, the inspectors attended various outage meetings including outage control center (OCC) morning meetings, operations daily team meetings, and schedule performance update meetings. The inspectors regularly monitored outage control activities to ensure system, structure, and component configurations, and work scope were consistent with TS requirements, site procedures, and outage risk controls.

Outage Activities

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

- Verified operability of reactor coolant system pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Examined foreign material exclusion (FME) controls put in place inside containment

Monitoring of Shutdown Activities

The inspectors observed the reactor plant shutdown to Mode 3, Hot Standby. The inspectors performed walk downs of important systems and components used for decay heat removal during the shutdown period including the intake cooling water system, component cooling water system, and the secondary plant steam generator atmospheric dump valves.

Containment Closure Activities

The inspectors examined the applicable TSs, license conditions, and verified administrative prerequisites were being maintained for containment integrity while in Mode 3. The inspectors reviewed the licensee's foreign material exclusion controls and verified that logs were in place and maintained by the licensee. The inspectors performed an FME log inspection prior to the reactor plant startup to verify that no equipment or debris was left in containment that could affect plant operations.

Reactor Startup and Mode Changes

On May 3, 2015, the inspectors observed the Unit 3 reactor startup and turbine synchronization to the electrical grid and associated mode changes. The inspectors reviewed the recorded reactor startup physics data in order to verify it was as calculated by the licensee reactor engineering staff. The inspectors determined the startup and mode changes were performed in accordance with procedure 3-GOP-301, "Mode 3 to Power Operations."

This inspection constitutes one sample.

b. Findings

No findings were identified.

.2 Unit 4 Planned Maintenance Outage

a. Inspection Scope

On May 8, 2015, Unit 4 was shutdown to Mode 3 for a planned maintenance outage to inspect, evaluate, and repair the non-safety related normal containment cooler motor pulley assemblies as part of an extent of condition from lessons learned from Unit 3. The inspectors attended various outage meetings including OCC morning meetings, operations daily team meetings, and schedule performance update meetings. The inspectors regularly monitored outage control activities to ensure system, structure, and component configurations, and work scope were consistent with TS requirements, site procedures, and outage risk controls.

Monitoring of Shutdown Activities

The inspectors observed the reactor plant shutdown to hot standby from the control room. The inspectors verified the shutdown was performed in accordance with operations procedure 4-GOP-103, "Power Operation to Hot Standby." The inspectors performed walkdowns of important systems and components used for decay heat removal from the reactor coolant system during the shutdown period including the secondary steam plant, intake cooling water system, and component cooling water system.

Outage Activities

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

- Verified operability of reactor coolant system pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Examined FME controls put in place inside containment

Containment Closure Activities

The inspectors examined the applicable TSs, license conditions, and verified administrative prerequisites were being maintained for containment integrity while in Mode 3. The inspectors reviewed the licensee's foreign material exclusion controls and verified that logs were in place and maintained by the licensee. 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.

Monitoring of Startup Activities

The inspectors examined the applicable TSs, 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 results of the estimated critical core calculations were discussed with the reactor engineers and control room operators to ensure the core operating parameters were consistent with the core design. The inspectors witnessed the reactor startup and portions of the power ascension to full power.

Reactor Startup and Mode Changes

On May 11, 2015, the inspectors observed the Unit 4 reactor startup and associated Mode changes. The inspectors reviewed the recorded reactor startup physics data in order to verify 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 4-GOP-301, "Mode 3 to Power Operations."

This inspection constitutes one sample.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or observed the following six surveillance tests to verify that the tests met the TS requirements, the UFSAR 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 status required for the system to perform its safety function. The inspectors verified that any surveillance deficiencies were documented in the licensee's CAP. This inspection constitutes two surveillance test samples, three inservice testing (IST) samples, and one leak detection surveillance sample. The inspectors reviewed the following tests:

Surveillance Test:
- 3-OSP-023.1, 3A EDG Monthly Test
- 4-OSP-023.1, 4A EDG Monthly Test

In-Service Tests:
- 4-OSP-068.2, 4A Containment Spray Pump Test (IST)
- 3-OSP-047.1B, 3B Charging Pump Group A Pump Test (IST)
- 4-OSP-047.1C, 4C Charging Pump Group A Pump Test (IST)

RCS Leak Detection Test:
- 3-OSP-041.1, Unit 3 Reactor Coolant System Leak Rate Calculation

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Emergency Preparedness Drill

a. Inspection Scope

On June 25, 2015, the inspectors observed an emergency preparedness drill and the performance of the licensee's emergency response organization. The drill included a simulated pressure boundary leak greater than 10 gpm on Unit 3, an automatic reactor trip that failed to shut down the reactor, and a loss of all off-site and all on-site AC power to emergency busses. The loss all off-site and all on-site AC power to emergency busses for 15 minutes or longer required a site area emergency declaration and notification to state and local county officials, and the NRC per licensee procedure 0-EPIP-20101, "Duties of the Emergency Coordinator." The scenario progressed to a prolonged loss of all off-site and all on-site AC power to emergency busses requiring a general emergency declaration and an additional notification. The inspectors observed the crew in the plant simulator including simulated implementation of emergency procedures. The inspectors observed the emergency response organization staff in the control room simulator, technical support center, and operational support center while they implemented the event classification guidelines and emergency response procedures. The inspectors determined that the 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, reviewed the licensee's critique items, and discussed inspector observations with the licensee to verify that drill issues were identified and captured in the licensee's CAP. This inspection constitutes one sample.

b. Findings

No findings were identified.

4OA1 Performance Indicator Verification (IP 71151)

.1 Barrier Integrity Cornerstone

a. Inspection Scope

The inspectors reviewed licensee submittals for the Unit 3 and Unit 4 performance indicators (PI) listed below for the period April 1, 2014, through March 31, 2015, 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 checked operator logs, plant status reports, condition reports, system health reports, and PI data sheets to verify that the licensee had identified the required data, as applicable.

The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution. This inspection constitutes four samples.

- Unit 3 reactor coolant system leakage
- Unit 4 reactor coolant system leakage
- Unit 3 reactor coolant system activity
- Unit 4 reactor coolant system activity

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution (IP 71152)

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, "Identification and Resolution of Problems," and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered daily into the licensee's CAP. This review was accomplished by reviewing daily printed summaries of ARs and by reviewing the licensee's electronic AR database. Additionally, reactor coolant system (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 Annual Sample: Degraded High Head Safety Injection Piping Supports in Safety Injection Pipe Trench

a. Inspection Scope

The inspectors selected action request (AR) 02056175, "Degraded HHSI Piping Supports in the Safety Injection (SI) Pipe Trench," and AR 02056187, "Degraded Conduit in Unit 3 CCW Pump Room," for a more in-depth review of the circumstances and the corrective actions that followed. The action request report was reviewed to ensure that an appropriate evaluation was performed and corrective actions were specified and prioritized in accordance with the licensee's program. Other attributes checked included disposition of operability and resolution of the problem including cause determination, past operability determination, and corrective actions. The inspectors interviewed plant personnel and evaluated the condition report in accordance with the requirements of the licensee's corrective actions process as specified in licensee's procedures PI-AA-204, "Condition Identification and Screening Process," and PI-AA-205, "Condition Evaluation and Corrective Action." This inspection constitutes one sample.

a. Findings and Observations

No inspector findings were identified. The licensee identified degraded HHSI piping supports and conduit located underneath the floor grating in the Unit 3 CCW Pump and Heat Exchanger room. The inspectors noted that the licensee's evaluation for the HHSI pipe supports concluded that there was negligible degradation of the bolting on the supports attached to the pipe trench wall and that the supports remain capable of supporting design loadings. The inspectors also noted that the licensee evaluation for the degraded conduit concluded that the two conduits of concern are abandoned with no safety-related wires inside.

Immediate corrective actions for this event included a walk down of the Unit 3 and Unit 4 SI pipe trench by engineering, cleaning off the corrosion products from the supports, and an engineering evaluation of the as-found conditions. The licensee also determined that were was no flood barrier deficiency for the degraded conduit running through the auxiliary building wall. The licensee determined the cause of the corrosion to be exposure to outside environmental conditions of the supports and conduit since the pipe trench is outside in the CCW Pump and Heat Exchanger room.

.3 Semi-Annual Trend

a. Inspection Scope

The inspectors performed a review of the licensee's records including action requests, CAP health reports, apparent cause evaluation reports, and various corrective action review board reports to asses an adverse trend identified by the licensee in the quality of their causal analysis evaluations. The inspectors reviewed the licensee action request that identified an adverse trend where a number of cause evaluations since January, 2015, had not been meeting the requirements and standards as described in licensee procedure PI-AA-100-1007, "Apparent Cause Evaluation Procedure." 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. This inspection constitutes one sample.

b. Findings and Observations

No inspector findings were identified. The license determined that the common cause for the declining quality of the apparent cause evaluations was due to inadequate usage of the guiding procedure PI-AA-100-1007, and a lack of experience among the engineers assigned the evaluations. The inspectors noted that although the engineers received the required training as part of their qualifications, their practical experience in performing the evaluations was limited and, in some cases, their first time evaluating a particular type of subject material. The inspectors did not identify any additional trends not observed by the licensee's trending activities.

4OA3 Follow-up of Events and Notice of Enforcement Discretion (IP 71153)

(Closed) Licensee Event Report 05000251/2015-001-00, Automatic Auxiliary Feedwater System Actuation During a Planned Reactor Trip

a. Inspection Scope

The Licensee Event Report (LER) documented the unplanned automatic actuation of the AFW system during a planned reactor plant shutdown. The inspectors reviewed the LER and the associated corrective action document (AR 2009853) 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 root cause evaluation to identify any licensee performance deficiencies associated with the issue.

b. Findings

Introduction: A Green self-revealing non-cited violation of TS 6.8.1, "Procedures," was identified for the licensee's failure to ensure an adequate general operating procedure was in place to ensure reactor power level was precisely controlled when changing modes of operation from power operation to hot standby. As a result, the control room operators manually tripped the reactor at a power level that was higher than desired resulting in an unplanned auxiliary feed water system actuation (AFAS).

Description: On November 28, 2014, the licensee identified a large steam leak below the Unit 4 high pressure turbine while the unit was operating at full power. The operators reduced load on the turbine and lowered reactor power in an effort to locate the source of the leak with no success. On November 30, 2014, Unit 4 was manually tripped from 23 percent reactor power while performing a reactor plant shutdown in accordance with procedure 4-GOP-103, "Power Operation to Hot Standby." Following the reactor trip, an AFAS actuation occurred due to a low-low steam generator level condition on the 4C steam generator. The AFAS actuation caused a cool down of the reactor coolant system requiring the closure of the main steam isolation valves. Following the reactor plant shutdown, the licensee determined the source of the steam leak to be from a 1-1/4 inch high pressure turbine casing cylinder heating pipe weld that had failed due to low stress high cyclic fatigue. The affected pipe was evaluated as not necessary by the vendor and licensee and capped off prior to the reactor plant returning to full power on December 6, 2014.

The inspectors found that preceding step 5.22 of Procedure 4-GOP-103, a note stated "Manual trip of the reactor below 20 percent power reduces the probability of unnecessary AFW actuation and enables more effective control of steam generator levels." However, procedure 4-GOP-103, step 5.22, stated that when reactor power decreases to approximately 15 to 25 percent and stable then manually trip the reactor. The licensee event report determined that the appropriate steam generator level operating margin to prevent AFW actuation was not established prior to the reactor trip. The inspectors found that the contrast between the note and action step did not provide the operating crew adequate guidance to prevent an inadvertent AFW actuation.

The licensee's evaluation for the cause of the unplanned AFAS was due to the station not having established an operating philosophy to prevent AFAS from occurring and having procedural guidance that allowed manually tripping the reactor above 20 percent reactor power during a controlled reactor plant shutdown.

Analysis: The licensee's failure to maintain an adequate procedure for changing reactor plant operating modes from power operation to hot standby was a performance deficiency. Specifically, the licensee failed to have specific guidance in procedure 4-GOP-103 to ensure reactor power was lowered to at least 20 percent prior to initiating a manual reactor trip during a controlled shutdown to prevent an inadvertent AFAS actuation. The inspectors determined the performance deficiency was more than minor using IMC 0612, Appendix B, Issue Screening, 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 shutdown as well as power operations. Specifically, the failure to have specific guidance in procedure 4-GOP-103 to minimize steam generator level shrinkage following a manual reactor trip resulted in an inadvertent AFAS, excessive RCS cooldown, and reduced safe shutdown margin. 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." 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 power 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 adequate to prevent an inadvertent AFAS while performing a controlled reactor plant shutdown from power operation to hot standby. The licensee took action to revise the procedure to reduce reactor power to 15 to 20 percent prior to manually tripping the reactor. 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 2009853. (NCV 05000251/ 2015002-01, Inadequate General Operating Procedure to Prevent Inadvertent AFAS While Performing a Reactor Plant Planned Shutdown)

4OA5 Other Activities

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

a. Inspection Scope

On June 18, 2015, the inspector conducted a walk down of the Independent Spent Fuel Storage Facility (ISFSI) protected area per inspection procedure 60855.1, “Operation of an ISFSI at Operating Plants.” The inspectors observed each cask building temperature indicator and passive ventilation system to be free of any obstruction allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and radiation protection access controls to the ISFSI area to be satisfactory.

b. Findings

No findings were identified.

.2 Review of Institute of Nuclear Power Operations Evaluation Report

The inspectors reviewed the latest Institute of Nuclear Power Operations evaluation report for the an evaluation and assessment performed in December, 2014. The inspectors reviewed the report to ensure that issues identified were consistent with NRC perspectives of licensee performance and to determine if any safety issues were identified that required further NRC inspection or discussion.

4OA6 Meetings

The resident inspectors presented the inspection results to Mr. Tom Summers and other members of licensee management on July 9, 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.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel:
F. Banks, Quality Manager
C. Cashwell, Training Manager
P. Czaya, Licensing
C. Domingos, Plant General Manager
T. Eck, Security Manager
M. Guth, Licensing Manager
O. Hanek, Licensing Engineer
A. Katz, Projects Manager
G. Melin, Operations Manager
S. Mihalakea, Licensing
K. Ohara, Emergency Preparedness Manager
J. Pallin, Engineering Director
D. Sluszka, Work Controls Manager
B. Stamp, Operations Director
T. Summers, Site Vice-President
M. Wayland, Maintenance Director

NRC Personnel:
C. Kontz, Senior Project Engineer
M. Riches, Project Engineer
A. Vargas, Project Engineer
R. Williams, Senior Project Engineer

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000251/2015002-01	NCV	Inadequate General Operating Procedure to Prevent Inadvertent AFAS While Performing a Reactor Plant Planned Shutdown (Section 4OA3)

Closed

05000251/2015-001-00	LER	Automatic Auxiliary Feedwater System Actuation During a Planned Reactor Trip (Section 4OA3)

LIST OF DOCUMENTS REVIEWED

Action Requests:

02038459, Safety Issue, No Safety Chain on Emergency Ladder
02039495, Unable To Complete 0-GME-005.03 for 4AD07 SBO Breaker
02039635, Station Blackout Tie Breaker Testing
02040240, RCS A HI Tave Alarmed Early Following Dilution
02040257, 4A Charging Pump Needs Oil
02040258, 3B Charging Pump Fluid Drive Needs Oil
02040265, 4B Turbo Oil Pump Minor Oil Seal Leak
02041403, Time Delay Actuation Outside Acceptable Band
02041408, Time Delay Actuation Outside Acceptable Band
02041612, 3P253A 3A 4KV Room Sump Pump Does Not Turn Off
02041798, Spalling Concrete in Unit 4 Spent Fuel Pool Room
02041864, 3A EDG Coolant Reservoir Stained With Coolant
02044844, 4KV Switchgear Sump High Level
02044936, Performed Level 3 Leak Rate Investigation on Unit 3
02044977, Unit 3 Gamma Metric Channel Alarm Causing a Distraction
02045014, N-3-31 Detector Replacement
02045085, 3B RCP Motor Has Oil Leak and Needs Replacement
02046549, Active Boric Acid Leak at Bonnet of 4-873B
02046555, Maintenance Rule A(1) Status for NIS Source Range Detectors
02047770, Errors in Unit 4 Post Trip Review Restart Report
02047817, Coolant Leak From the 3B EDG
02049161, Excessive Ripple on the 22 Vdc Power Supply
02049180, Missing Bolt and Washer on 3B Belt Guard
02049269, 10 CFR 50.59 Screening for Rod Control System Monitoring
02049306, FME Found in 4P212A Pump Casing
20241958, U4 RHR Pump High Radiation Barrier Is Unsafe

Section 1R01: Adverse Weather
0-ONOP-103.3, Severe Weather Preparations
Seasonal Readiness Memo, Mike Kiley to Peter Sena, dated May 24, 2015

Section 1R04: Equipment Alignment
4-NOP-022, Emergency Diesel Generator Fuel Oil System
4-NOP-023, Emergency Diesel Generator
4-NOP-068, Containment Spray System
P&ID 5610-M-3075, Auxiliary Feedwater (AFW) System Turbine Drive for AFW Pumps
P&ID 5613-M-3022, Emergency Diesel Engine and Oil System
P&ID 5614-M-3068, Containment Spray System

Section 1R05: Fire Protection
0-ONOP-016.10, Pre-Fire Plan Guidelines and Safe Shutdown Manual Actions

Section 1R06: Flood Protection Measures
0-SMM-102.1, Flood Protection Stop Log and Penetration Seal Inspection
Drawing 5610-C-1695, Network of Barriers for External Flood Protection

Section 1R11: Licensed Operator Requalification Process
0-ADM-211, Emergency and Off-Normal Operating Procedure Usage
TR-AA-230-1007, Conduct of Simulator Training and Evaluation

Section 1R15: Operability Evaluations
0-ADM-213, Technical Specification Related Equipment Out of Service Logbook
0-ADM-226, Operability Screening and Condition Reports
EN-AA-203-1001, Operability Determinations and Assessments

Section 1R18: Plant Modifications
5610-P-884-Sh 1, AFW Discharge
EC 280631, Unit 3 Flex Mechanical Modifications
WO 40295266, AFW A & B Pump Discharge Line Piping Modification

Section 1R19: Post Maintenance Testing
0-ADM-737, Post Maintenance Testing
MA-AA-203-1000, Maintenance Functional Testing

Section 1R20: Refueling and Other Outage Activities
0-ADM-009, Containment Closeout Inspection
MA-AA-101-1000, Foreign Material Exclusion Procedure

Section 4OA1: Performance Indicator Verification
0-ADM-032, NRC Performance Indicators Turkey Point, Rev. 5

Section 4OA2: Problem Identification and Resolution
AR 2046565, Engineering CAP Indicator for Quality of Cause Analysis

LIST OF ACRONYMS

AFW	Auxiliary Feedwater
AR	Action Request
ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
EDG	Emergency Diesel Generator
FME	Foreign Material Exclusion
GOP	General Operating Procedure
HHSI	High Head Safety Injection
ICW	Intake Cooling Water
IST	Inservice Testing
LCO	Limiting Condition of Operation
LER	Licensee Event Report
NAP	Nuclear Administrative Procedure
NRC	Nuclear Regulatory Commission
OCC	Outage Control Center
ONOP	Off Normal Operating Procedure
OOS	Out of Service
OSP	Operations Surveillance Procedure
P&ID	Piping and Instrumentation Drawing
PI	Performance Indicator
PW	Primary Water
RCE	Root Cause Evaluation
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RTP	Rated Thermal Power
SI	Safety Injection
TS	Technical Specifications
U3	Unit 3
U4	Unit 4
UFSAR	Updated Final Safety Analysis Report
WO	Work Order