



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

April 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 05000250/2015001 and 05000251/2015001**

Dear Mr. Nazar:

On March 31, 2015, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Turkey Point Nuclear Generating Station Units 3 and 4. On April 9, 2015, the NRC inspectors discussed the results of the inspection with Mr. Kiley and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented a Severity Level IV violation with no associated finding. Further, inspectors documented a licensee-identified violation (LIV) which was determined to be of very low safety significance 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 Turkey Point Nuclear Generating Station Units 3 and 4.

In accordance with Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding," 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's Public Document Room or from the Publicly Available Records (PARS) component of the NRC's Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

/RA/

Eric Stamm, Chief (Acting)
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos.: 05000250, 05000251
License Nos.: DPR-31, DPR-41

Enclosure:
IR 05000250/2015001 and 05000251/2015001,
w/Attachment: Supplementary Information

cc: Distribution via ListServ

M. Nazar

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M. Nazar

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Letter to Mano Nazar from Eric Stamm dated April 30, 2015.

SUBJECT: TURKEY POINT NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000250/2015001, and 05000251/2015001

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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: 05000250/2015001, 05000251/2015001

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

Facility: Turkey Point Generating Station, Units 3 & 4

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

Dates: January 1 to March 31, 2015

Inspectors: T. Hoeg, Senior Resident Inspector
M. Endress, Resident Inspector
M. Riches, Project Engineer

Approved by: Eric Stamm, Chief (Acting)
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000250/2015001, 05000251/2015001; 01/01/2015 – 3/31/2015; Turkey Point Nuclear Plant, Units 3 & 4; Event Follow-up.

The report covered a three month period of inspection by the resident inspectors and region-based specialist inspectors. One licensee-identified Green non-cited violation (NCV) and Severity Level IV (SL IV) NCV were identified. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, Red) and determined using IMC 0609, "Significance Determination Process" dated June 2, 2011. 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.

List of Findings and Violations

Severity Level IV. The NRC identified a SL IV NCV of Title 10 of the *Code of Federal Regulations* (10 CFR) 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," because unplanned inoperability of the Unit 4 emergency containment cooler (ECC) system was not reported to the NRC within eight hours of the time of discovery, as required by 10 CFR 50.72(b)(3)(v), "Event or Condition that Could Have Prevented Fulfillment of a Safety Function." This issue was subsequently reported to the NRC in accordance with 10 CFR 50.72(b)(3)(v), and entered into the corrective action program (CAP) as condition report AR 01990555.

Because the issue impacted the regulatory process; in that, a safety system functional failure was not reported to the NRC within the required timeframe thereby delaying the NRC's opportunity to review the matter, the inspectors evaluated the issue in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, dated February 4, 2015, the inspectors determined that the violation was a SL IV (more than a minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because the licensee failed to make a report required by 10 CFR 50.72. In accordance with Inspection Manual Chapter (IMC) 0612, "Power Reactor Inspection Reports," dated January 24, 2013, traditional enforcement issues are not assigned cross-cutting aspects. (Section 4OA3.2)

Licensee-identified Violations

Violations of very low safety or security significance or Severity Level IV that were identified by the licensee have been reviewed by the NRC. Corrective actions taken or planned by the licensee have been entered into the licensee's CAP. These violations and corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

Summary of Plant Status

Unit 3 began this inspection period at 100 percent of Rated Thermal Power (RTP) where it remained until March 5, 2015, when it was reduced to 48 percent of RTP for planned turbine valve testing. Unit 3 returned to 100 percent of RTP on March 8, 2015, where it remained for the remainder of this inspection period. Unit 4 began this inspection period at 100 percent of RTP where it remained throughout this inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

.1 Partial Equipment Walk downs (Quarterly)

a. Inspection Scope

The inspectors conducted four partial alignment verifications of the safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee 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. These inspections constitute four samples.

- 4B emergency diesel generator (EDG) while 4A EDG was Out of Service (OOS)
- 4A, 4B, and 3B high head safety injection (HHSI) while the 3A HHSI was OOS
- Auxiliary feedwater (AFW) train 2 while train 1 was OOS
- 4B, 3A, and 3B HHSI while the 4A HHSI was OOS

b. Findings

No findings were identified.

.2 Equipment Alignment (Semi-annual)

a. Inspection Scope

The inspectors conducted a detailed review of the alignment and material condition of the 4B EDG system to verify its capability to meet its design basis function while the 4A EDG was out of service for testing. The inspectors utilized licensee procedure 4-OSP-023.1, Diesel Generator Operability Test, Attachment 6, 4B EDG System Flow path Verification Data Sheet, and Drawings 5614-M-3022, 4B EDG Oil, Air, and Cooling

Water Systems, Sheets 2, 4, and 6, to verify the system alignment was correct. During the walk down, the inspectors verified, as appropriate, that: 1) valves were correctly positioned and did not exhibit leakage that would impact their function, 2) electrical power was available as required, 3) major portions of the system and components were correctly labeled, cooled, and ventilated, 4) hangers and supports appeared correctly installed and functional, 5) essential support systems were operational, 6) ancillary equipment or debris did not interfere with system performance, 7) tagging clearances were appropriate, and 8) valves were locked as required by the licensee's locked valve program. Other items reviewed included the operator workaround list, the temporary modification list, system health reports, system description, and open maintenance work orders. In addition, the inspectors reviewed the licensee's CAP to ensure that the licensee was identifying and resolving associated equipment problems. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walk downs

a. Inspection Scope

The inspectors toured six 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 licensee's fire impairment lists were routinely reviewed. In addition, the inspectors reviewed the condition report (CR) database 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 assure monitoring of area status and to verify proper identification and handling of transient combustibles. Documents reviewed are listed in the Attachment. These inspections constitute six samples. The following areas were inspected:

- Unit 3 Safety Injection (SI) Pump Room Fire Zone 053
- Unit 4 EDG Room Fire Zone 133
- Unit 4 West Electrical Penetration Room Fire Zone 027
- Unit 3 Residual Heat Removal (RHR) Heat Exchanger Room Zone 011
- 4B 4kV Switchgear Room Fire Zone 067
- Unit 3 Steam Generator Feed Pump Area Zone 069

b. Findings

No findings were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors conducted walkdowns of the following area subject to internal flooding to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed the Turkey Point Updated Final Safety Analysis Report (UFSAR), Appendix 5F, Internal Plant Flooding, which discussed protection of areas containing safety-related equipment that could be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, sump pump configurations, and control of debris. Operability of sump systems, including alarms, was verified to be in working order. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

- Unit 3 and 4 HHSI pump rooms

The inspectors performed an underground cable manhole inspection including checking for accumulated water and cable inspections in accordance with work order (WO) 40332593. The following area was inspected and the associated records were reviewed. This inspection constitutes a partial sample.

- Manhole 403

b. Findings

No findings were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors selected the 3C component cooling water (CCW) heat exchanger to verify that the licensee was performing non-routine maintenance and follow-on inspection and testing following maintenance in accordance with procedures. The inspectors observed portions of the heat exchanger re-tubing performed by the licensee under WO 40088995. The inspectors also verified that the cleaning and inspection following maintenance was performed and properly documented in accordance with completed maintenance procedure 0-PMM-030.01, "Component Cooling Water Heat Exchanger Cleaning and Inspection." The inspectors also reviewed completed licensee procedure 3-OSP-019.4, "Component Cooling Water Heat Exchanger Performance Monitoring," to ensure the heat exchanger was restored, leak tested, and returned to service with no deficiencies. The inspectors walked down portions of the cooling systems for integrity checks and to assess operational lineup and material condition. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification 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 the coordination and control of the reactor plant operations.

On March 5, 2015, the inspectors assessed licensed operator performance in the plant-specific simulator during “just in time training” for an upcoming scheduled Unit 3 surveillance procedure to perform main turbine valve testing. The training scenario was started with the unit in Mode 1 at 48 percent of RTP. The operating crew simulated performing a closure test of the main turbine stop and control valves one side at a time while the turbine was synced to the grid in accordance with procedure 3-OSP-089, “Main Turbine Valves Operability Test.” Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

During these simulator observations, the simulator board configurations were compared with actual plant control board configurations. 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
- 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
- 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 observed the following two focused control room observations and assessed licensed operator performance in the plant and control room during periods of heightened activity or risk and where the activities could affect overall plant safety. These observations routinely included surveillance testing, response to alarms, communications, and coordination of activities. These observations were conducted to verify operator compliance with station operating protocols as described in licensee procedure OP-AA-100-100, "Conduct of Operations." 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 procedure place keeping and narrative logs
- Supervision of activities, including risk and reactivity management

On March 4, 2015, the inspectors performed a focused observation which included a Unit 3 down power from 100 percent of RTP to 48 percent of RTP power in preparation of turbine valve testing in accordance with procedure 3-GOP-103, "Power Operation to Hot Standby Operation." Specifically, the inspectors verified the operators used the Reactivity Maneuver Plan provided by reactor engineering for the desired power change rate. The inspectors verified that operators borated and moved rods in a controlled manner to meet Technical Specification (TS) limits for axial flux deviation.

On March 5, 2015, the inspectors performed a focused observation which included a Unit 3 non-routine test of the main turbine control and throttle valves. Specifically, the inspectors verified the operators met the prerequisites and observed the precautions and limitations in accordance with their procedure 3-OSP-089, "Main Turbine Valves Operability Test." The inspectors verified that operators performed the test in a controlled manner to prevent secondary plant perturbations. Documents reviewed are listed in the Attachment. These inspections constitute two samples.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed problems associated with the two action requests (ARs) listed below. 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 ER-AA-100-2002, "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 problems were being identified and appropriately entered into the CAP. The inspectors used the licensee's maintenance rule data base, system health reports, maintenance rule unavailability status reports, and the CAP as sources of information on tracking and resolution of issues. Documents reviewed are listed in the Attachment. These inspections constitute two samples.

- AR 02021075, Auxiliary Building Structure Degraded Concrete
- AR 01771733, 3CD Diesel Driven Instrument Air Compressor Unavailability

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 five 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 risk assessments during the inspection period. Documents reviewed are listed in the Attachment. These inspections constitute five samples.

- 4A EDG, 4B EDG, and 3C CCW pump OOS
- 3C CCW heat exchanger, 3A EDG, 3A HHSl pump OOS
- 3A CCW heat exchanger, 3B EDG, 3B residual heat removal (RHR) pump OOS
- 4B EDG, 4C intake cooling water (ICW) pump, 4C CCW pump OOS
- 3A containment spray pump, 3C normal containment cooler OOS

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors evaluated the technical adequacy of licensee evaluations to ensure that TS operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred for the six operability evaluations described in the ARs listed below. The inspectors reviewed applicable sections of the final safety analysis report 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 design function. The inspectors also reviewed a sampling of ARs to verify that the licensee was routinely identifying and correcting any deficiencies associated with operability evaluations. Documents reviewed are listed in the Attachment. These inspections constitute six samples.

- AR 02015046, Unit 4 HHSI system gas voids
- AR 02015967, 3A HHSI pump oil leakage
- AR 02024280, 3C CCW heat exchanger turbulent flow condition
- AR 02024527, Unit 4 HHSI system vent tubing unsupported
- AR 02025820, Unit 4 AFW piping corrosion
- AR 01921120, Unit 3 and Unit 4 4 KV breaker control power fuses (Operator Burden Sample)

b. Findings

No findings were identified.

1R18 Plant Modifications

Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed a permanent plant modification technical evaluation for replacing 22 thimble tubes on Unit 4 during the PT4-27 RFO (refueling outage). The licensee determined that the tubes needed to be replaced based on eddy current test results that indicated wall thinning. 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. Additionally, the inspectors verified that pressure boundary integrity was not

compromised as well as verified that problems associated with modifications were being identified and entered into the CAP. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

- EC 270834, Unit 4 Thimble Tube Replacement

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the five post maintenance tests and associated work orders 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 work orders (WOs). Documents reviewed are listed in the Attachment. These inspections constitute five samples.

- WO 40360769, 3A HHSI Pump Bearing Oil Leakage Repair
- WO 40160129, 4B Emergency Containment Cooler Control Valve Repair
- WO 40367947, 3B EDG Output Breaker Relay Repair
- WO 40358149, 3B Charging Pump Repair
- WO 40034690, 4A Charging Pump Discharge Relief Valve Replacement

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 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/status required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP. Documents reviewed are listed in the Attachment. The inspectors reviewed the following tests, which constitute six total samples:

Surveillance Test: (two samples)

- 3-OSP-023.1, 3B EDG Monthly Test
- 3-OSP-023.2, 3A EDG 24 Hour Full Load Test and Load Rejection

In-Service Tests: (three samples)

- 3-OSP-062.2, 3A Safety Injection Pump Comprehensive Pump Test
- 3-OSP-030.4, 3C CCW Heat Exchanger Performance Test
- 4-OSP-075.7, Auxiliary Feed Water (AFW) Train 2 Backup Nitrogen Test

Reactor Coolant System (RCS) Leak Detection Test: (one sample)

- 4-OSP-041.1, Unit 4 Reactor Coolant System Leak Rate Calculation

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

.1 Emergency Preparedness Drilla. Inspection Scope

On January 13, 2015, the inspectors observed an emergency preparedness drill and the performance of the licensee's emergency response organization. The drill included a simulated hostile action within the owner controlled area and protected area. The hostile action within the protected area 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 the loss of the boric acid storage tanks and both refueling water storage tanks resulting in a General Emergency declaration due to loss of physical control of the facility. 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 technical support center and emergency operations facility 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. Documents reviewed are listed in the Attachment. This constitutes one sample.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification (IP 71151)

Initiating Events Cornerstone

a. Inspection Scope

The inspectors reviewed licensee submittals for the Unit 3 and Unit 4 performance indicators (PI) listed below for the period January 1, 2014, through December 31, 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 checked operator logs, plant status reports, ARs, 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. Documents reviewed are listed in the Attachment. These inspections constitute three samples for each unit.

- Unit 3 Unplanned Scrams per 7000 Critical Hours
- Unit 4 Unplanned Scrams per 7000 Critical Hours
- Unit 3 Unplanned Scrams With Complications
- Unit 4 Unplanned Scrams With Complications
- Unit 3 Unplanned Power Changes per 7000 Critical Hours
- Unit 4 Unplanned Power Changes per 7000 Critical Hours

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, "Problem Identification and Resolution," 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. This inspection constitutes one sample.

b. Findings

No findings were identified.

.2 Annual Sample: Apparent Cause Evaluations Associated With Inadvertent Safety Injections on Unit 4

a. Inspection Scope

The inspectors selected the root cause evaluation for ARs 01995350 and 01996912, "Unit 4 Safety Injection" and "Unit 4 Inadvertent Safety Injection," respectively, for a more in-depth review of the circumstances and the corrective actions that followed. For AR 01995350, on October 1, 2014, with Unit 4 defueled, safety injection (SI) was actuated on low pressurizer pressure when the SI signal block was inadvertently removed during pressure transmitter calibrations. The SI signal block was removed due to the licensee performing simultaneous maintenance on two redundant pressurizer pressure instruments. The licensee considered the actuation as invalid because it was not in response to an actual plant condition requiring the need for SI. For AR 01996912, on October 7, 2014, with Unit 4 defueled, SI was actuated while re-energizing safeguards racks in preparation for upcoming maintenance. Operators did not properly configure test switches to block all locked SI signals, thus leaving in a locked-in SI signal when the safeguards racks were re-energized. The licensee considered the actuation as invalid because it was not in response to an actual plant condition requiring the need for SI. For both SI actuations, no injection occurred to the Unit 4 RCS and no required TS equipment was rendered inoperable due to the SI signal.

The inspectors reviewed the licensee's apparent cause evaluations of the events and the associated corrective actions taken or planned. The inspectors reviewed licensee performance attributes associated with complete and accurate information of the problem, 10 CFR 50.72 reporting requirements, identification of the apparent and contributing causes, and planning or completion of assigned corrective actions. The inspectors interviewed plant personnel and evaluated the licensee's administration of this selected condition report in accordance with their corrective action program as specified in licensee procedures PI-AA-204, "Condition Identification and Screening Process," and PI-AA-205, "Condition Evaluation and Corrective Action." Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings and Observations

No findings were identified. The licensee determined the apparent cause of the event that occurred on October 1, 2014, to be that general operating procedure 3/4-GOP-305, "Hot Standby to Cold Shutdown," did not energize the safeguards protection cabinets in Mode 5 when they were no longer required by TS. The licensee created a corrective action to review instrument and control (I&C) procedures for power range, turbine inlet pressure, and reactor coolant temperature for impact to unblocking interlocks. Immediate corrective actions for this event included revising 3/4-GOP-305 to de-energize the safeguards protection and containment isolation circuitry to prevent undesired actuations as well as revising procedures and checklists to prohibit

simultaneous work on redundant instrument channels. The licensee determined the apparent cause of the event that occurred on October 7, 2014, to be that the supervisor did not make it a priority to coach, verify, and provide oversight on human performance tools to be used during the evolution. Immediate corrective actions for this event included implementing continuous management oversight of control operations to ensure that standards were being maintained, placing the qualifications of the associated operators on hold until remedial training could be conducted, and performing a training needs analysis to evaluate if training was necessary for supervisors on coaching, verification, and providing oversight on human performance tools. The inspectors did not identify any trends not already identified by the licensee.

.3 Annual Sample: Apparent Cause Evaluation Associated With Leak Emanating from the 4B Emergency Diesel Generator Jacket Cooling Water Pump

a. Inspection Scope

The inspectors selected the root cause evaluation for AR 02015046, "Leak Emanating From the 4B Emergency Diesel Generator Jacket Cooling Water Pump," for a more in-depth review of the circumstances and the corrective actions that followed. On January 20, 2015, while preparing to run the 4B EDG for its monthly surveillance, operators noted a cooling water leak from the left side cooling water pump after barring over the engine. The leak was quantified at 0.17 gpm. The licensee ran the engine and utilized industry operating experience and vendor recommendations to attempt to stop the leak, but the leak rate increased to approximately 0.34 gpm. The licensee subsequently replaced the pump in accordance with WO 40364024. The removed pump was disassembled and the cause of the leak determined to be a chip on the carbon seal face that allowed the seal assembly to become cocked during engine barring.

The inspectors reviewed the licensee's apparent cause evaluation of the event and the associated corrective actions taken or planned. The inspectors reviewed licensee performance attributes associated with complete and accurate information of the problem, 10 CFR 50.72 reporting requirements, identification of the apparent and contributing causes, and planning or completion of assigned corrective actions. The inspectors interviewed plant personnel and evaluated the licensee's administration of this selected AR in accordance with their CAP as specified in licensee procedures PI-AA-204, "Condition Identification and Screening Process," and PI-AA-205, "Condition Evaluation and Corrective Action." Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings and Observations

No findings were identified. The licensee determined the apparent cause of the 4B EDG jacket cooling water pump leak to be a chip in the carbon seal face that allowed the seal assembly to become cocked during engine barring. The immediate corrective action taken for this event was replacing the leaking pump in accordance with WO 40364024. The licensee also created a corrective action to disassemble and inspect, to verify the existence of any defects, for a sample of installed and spare pumps that were purchased

from the same manufacturer in the same batch order. The inspectors did not identify any trends not already identified by the licensee.

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

.1 (Closed) Unresolved Item (URI) 05000250, 251/2014004-02, Notice of Enforcement Discretion (NOED) Due to Exceeding Ultimate Heat Sink Temperature

(Closed) Licensee Event Report (LER) 05000250, 251/2014-004-00, Ultimate Heat Sink Temperature Limit Exceeded Due to Environmental Conditions

a. Inspection Scope

On July 20, 2014, at 2:54 p.m., the Turkey Point cooling canal system and ultimate heat sink (UHS) temperature exceeded the TS 3.7.4 limit of 100 degrees F. The 12-hour requirement to be in Hot Standby was not exceeded and there was no condition prohibited by TS. If the temperature was not restored, it would have required both units be shut down and placed in Mode 3 within 12 hours and Mode 5 within 30 hours. The licensee requested that the NRC exercise discretion to not enforce compliance with the required actions of TS 3.7.4 since it would result in the unnecessary shutdown of both units without a corresponding health and safety benefit when operation of the units was essential for maintaining grid voltage stability. The NRC granted verbal approval of the NOED at 6:00 p.m., on July 20, 2014 (ADAMS Accession Nos. ML14204A652 and ML14213A069). The NOED period ended when the NRC issued a license amendment under exigent circumstances for Turkey Point on August 8, 2014, which raised the TS maximum temperature limit for the UHS from 100 degrees F to 104 degrees F (ADAMS Accession No. ML14199A107). On September 18, 2014, the licensee submitted LER 050002502014-004-00 (ADAMS Accession No. ML14280A484), which documented the UHS temperature exceeding the TS limit of 100 degrees F.

The licensee entered the event into the CAP as AR 1979256 and performed a root cause evaluation (RCE). The inspectors reviewed the licensee's RCE of the event and the associated corrective actions taken or planned. The inspectors reviewed licensee performance attributes associated with complete and accurate information of the problem, 10 CFR 50.73 reporting requirements, the root or any contributing causes, and planning or completion of assigned corrective actions. The inspectors interviewed plant personnel and evaluated the licensee's administration of this selected AR in accordance with their CAP as specified in licensee procedures PI-AA-204, "Condition Identification and Screening Process," and PI-AA-205, "Condition Evaluation and Corrective Action."

In order to better understand this issue of concern and the associated URI, the inspectors reviewed Turkey Point NOED 14-2-001 and related documents to determine the accuracy and consistency with the licensee's assertions including potential low grid voltage resulting from shutdown of the two units and factors other than generation load affecting cooling canal temperature (i.e. algae levels, abnormally low rainfall). The inspectors also verified the licensee's implementation of the commitments and compensatory measures during the period of enforcement discretion which included, maintaining a third CCW heat exchanger in service, increasing the frequency of CCW

heat exchanger performance tests and cleaning, increasing CCW and CCS temperature monitoring, management oversight, just-in-time operator training, and minimizing the performance of risk-significant maintenance activities. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings and Observations

No findings were identified. The inspectors determined that the event was a natural event that was not reasonably within the licensee's ability to foresee and prevent. The licensee determined that high concentrations of algae combined with high summer temperatures and low rainfall conditions created increased solar heating effects on the cooling canal system that were unexpected and considered a natural event. The licensee determined the root cause of the event was due to not having a program in place to monitor the overall health of the cooling canal system and its impact on the UHS TS temperature limit. The inspectors found that the licensee had identified and measured increased algae levels and water temperatures in the canal system dating back to the summer of 2013. The inspectors determined that the licensee was aware of the canal system changes in 2013 and they concluded the conditions would not impact the UHS temperature limit in the future. In the spring of 2014, the licensee found the algae and salinity concentrations in the canal system were increasing. The licensee determined the increased salinity concentration enhanced the algae growth. The licensee performed a prompt operability evaluation as documented in AR 01963338 focusing on CCW heat exchanger performance concluding the heat exchangers were operable with the elevated canal conditions. In June of 2014 the licensee initiated a chemical treatment project of the canal system in an attempt to reduce the algae concentration in order to reduce the solar heating effect on the UHS temperature prior to the late summer months. The project decreased algae concentrations slightly and was unsuccessful in limiting the solar heating effect which resulted in increased canal temperatures in July and the request for a NOED. Immediate corrective actions for this event included but were not limited to the following: (1) maintained a third CCW heat exchanger in service; (2) performed CCW heat exchanger performance tests weekly vice monthly; (3) performed more frequent cleanings of the CCW heat exchangers; and (4) monitored the UHS temperature hourly when above 100 degrees F.

The inspectors did not identify any trends associated with the URI or LER not already identified by the licensee. The inspectors did not identify any new issues during the review of the URI or LER. The URI and LER are closed.

.2 (Closed) LER 05000251/2014-003-00, Emergency Containment Cooler Safety Function Impacted During Breaker Replacement

a. Inspection Scope

The LER documented that the 4A emergency containment cooler (ECC) fan auto-start feature was inoperable for a period of time that was greater than allowed by TS. The licensee determined that the total out of service time for the 4A ECC fan was 203.5 hours which exceeded the TS allowed outage time of 72 hours. The LER also documented that the 4A ECC fan and 4C ECC fan were both inoperable at the same

time for a period time of that was greater than allowed by TS. The licensee determined that the total out of service time for the 4A ECC and 4C ECC fans together was 25.5 hours which exceeded the TS allowed outage time of one hour.

The inspectors reviewed the LER and the associated corrective action documents (ARs 01990010 and 02023627) 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 ARs to identify any licensee performance deficiencies associated with the issue. Documents reviewed are listed in the Attachment. This inspection constitutes one sample.

b. Findings

Introduction. The inspectors identified a SL IV NCV of 10 CFR 50.72, "Immediate Notification Requirements for Operating Nuclear Power Reactors," because the loss of safety function of the emergency containment cooling (ECC) system was not reported to the NRC within eight hours from the time of discovery as required by 10 CFR 50.72(b)(3)(v), "Event or Condition that Could Have Prevented Fulfillment of a Safety Function." Specifically, the condition existed where both the 4A and 4C ECC fans were inoperable simultaneously resulting in only one ECC fan operable and was not reported to the NRC within eight hours as required by 10 CFR 50.72.

Description. On September 3, 2014, at 0529 hours, Unit 4 was in Mode 1 and 100 percent rated thermal power when the 4C ECC fan was removed from service for a planned breaker replacement. The 4C ECC fan breaker replacement work order also lifted the 4A ECC fan automatic start control power leads in the breaker cubicle in error which prevented it from auto starting in the event of a SI signal. The 4A ECC is designed to start on the failure to start or continue to run of either the 4B or 4C ECC fan. As a result of disabling the auto start feature of the 4A ECC fan, both B train ECC fans were inoperable simultaneously for approximately 25.2 hours during the duration of the 4C ECC breaker replacement work.

On September 4, 2014, at 0658 hours, the 4C ECC fan was returned to service following the satisfactory post maintenance test (PMT) of the breaker replacement work. During a final review of the breaker replacement work order package, the licensee discovered that the control power leads associated with the auto-start capability of the 4A ECC fan were disconnected and not re-terminated during the breaker replacement work. This resulted in the 4A ECC fan not being capable of performing its auto-start design function with a B train SI signal present. The 4A ECC fan was declared inoperable at 1936 hours on September 9, 2014. The wires associated with the auto-start function were correctly installed and the 4A ECC fan tested satisfactorily and returned to service at 1700 hours on September 11, 2014.

The licensee declared the 4C ECC fan inoperable for approximately 25.2 hours during the duration of the breaker replacement work. The 4A ECC fan was determined to be inoperable for a total period of 203.5 hours and was not declared inoperable for approximately 158 hours. The licensee reported the event to the NRC in accordance with

10CFR50.72(b)(3)(v) at 1024 hours on September 10, 2014. This issue was entered in the CAP as AR 01990555.

Analysis. The inspectors determined that the failure to inform the NRC of the Unit 4 ECC system inoperability within eight hours in accordance with 10 CFR 50.72(b)(3)(v) was a performance deficiency that was reasonably within the licensee's ability to foresee and correct. Because the issue impacted the regulatory process, in that a condition that could have prevented fulfillment of a safety function was not reported to the NRC within the required timeframe, thereby delaying the NRC's opportunity to review the matter, the inspectors evaluated this performance deficiency in accordance with the traditional enforcement process. Using example 6.9.d.9 from the NRC Enforcement Policy, dated February 4, 2015, the inspectors determined that the violation was a SL IV (more than minor concern that resulted in no or relatively inappreciable potential safety or security consequence) violation, because licensee personnel failed to make a report required by 10 CFR 50.72 when information that the report was required had been reasonably within their ability to have been identified. In accordance with IMC 0612, "Power Reactor Inspection Reports," dated January 24, 2013, traditional enforcement issues are not assigned cross-cutting aspects.

Enforcement. 10 CFR 50.72(b)(3)(v)(D) requires, in part, that licensees shall notify the NRC within eight hours of the occurrence of any event or condition that at the time of discovery could have prevented the fulfillment of a safety function of structures or systems that are needed to mitigate the consequences of an accident.

Contrary to the above, on September 9, 2014, at approximately 1936 hours, the licensee determined that the 4A ECC was inoperable and was inoperable for a period of approximately 203.5 hours which exceeded the allowed outage time of 72 hours per TS 3.6.2.2.a. The licensee also determined that the 4A and 4C ECCs were inoperable simultaneously for a period of approximately 25.5 hours which exceeded the allowed outage time of 1 hour per TS 3.6.2.2.b. This information was not reported to the NRC until September 10, 2014 at 1024 hours, a period of approximately 15 hours. Because the violation was categorized as SL-IV, the event was subsequently reported to the NRC in accordance with 10 CFR 50.72(b)(3)(v), and was placed in the licensee's CAP as AR 1990010, this violation is being treated as an NCV, consistent with Section 2.3.2 of the Enforcement Policy. (NCV 05000251/2015001-01, Untimely 10 CFR 50.72 Notification of an ECC System Functional Failure)

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Kiley and other members of licensee management on April 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.

4OA7 Licensee-identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of the NRC Enforcement Policy for being dispositioned as an NCV.

10 CFR 50, Appendix B, Criterion III, Design Control, required, in part, that measures shall be established to assure that applicable regulatory requirements and the plant's design basis are correctly translated into drawings, procedures, and instructions and that these measures shall provide for verifying or checking the adequacy of the design. Contrary to the above, the licensee did not translate the design basis requirement, the 4A ECC fan auto-start upon failure to run of the 4C ECC fan, into the 4C ECC breaker replacement instructions and procedures. As a result, during the replacement of the 4C ECC fan breaker, the 4A ECC fan auto-start control power leads were disconnected and not re-terminated upon completion of the work. Consequently, the 4A and 4C ECC fans were unable to automatically start on a Train B safety injection (SI) signal for a period of approximately 25 hours. This violation was associated with the Barrier Integrity Cornerstone and determined to be of very low safety significance (Green) because the loss of this equipment or function by itself, did not represent an actual open pathway in the physical integrity of the reactor containment, containment isolation, or heat removal components, and did not involve an actual reduction in function of hydrogen igniters in the reactor containment. The licensee entered this violation into their CAP as AR 1990010.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

F. Banks, Quality Manager
C. Cashwell, Training Manager
T. Conboy, Plant General Manager
P. Czaya, Licensing
C. Domingos, Engineering Director
T. Eck, Security Manager
M. Guth, Licensing Manager
M. Kiley, Site Vice-President
S. Mihalakea, Licensing
K. Ohare, Emergency Preparedness Manager
J. Palin, System Engineering Manager
N. Rios, Chemistry Manager
D. Sluzka, Work Controls Manager
B. Stamp, Operations Director
M. Wayland, Maintenance Manager

NRC personnel:

J. Hanna, Senior Risk Analyst, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000251/2015001-01	NCV	Untimely 10 CFR 50.72 Notification of a ECC System Functional Failure (Section 4OA3.2)
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Closed

05000250, 251/2014004-02	URI	Notice of Enforcement Discretion for Exceeding Ultimate Heat Sink Temperature (Section 4OA3.1)
05000250, 251/2014-004-00	LER	Ultimate Heat Sink Temperature Limit Exceeded Due to Environmental Conditions (Section 4OA3.1)
05000250/2014-003-00	LER	Emergency Containment Cooler Safety Function Impacted During Breaker Replacement (Section 4OA3.2)

Attachment

LIST OF DOCUMENTS REVIEWED

Action Requests:

02019727	02019918	02019911	02019935
02020034	02020061	02020124	02020451
02020585	02020605	02018463	02020853
02021075	02021116	02021118	02021121
02021814	02021824	02021837	02022141
02022272	02022334	02022344	02022714
02022752	02022896	02023314	02022569
02024201	02025820	02028789	02028812
02030292	02030382	02026321	02026437
02026555	02026568	02019251	02019537
02031268	02027402	02027611	02027621
02026992	02027057	02031850	02032051
02032402	02032404	02032405	02032536
02025860	02033871		

Section 1R04: Equipment Alignment

P&ID 5610-M-3075, Auxiliary Feedwater (AFW) System Turbine Drive for AFW Pumps
Turkey Point System Description 117, Auxiliary Feedwater System
P&ID 5613-M-3022, Emergency Diesel Engine and Oil System
3-OP-023, Emergency Diesel Generator
3-NOP-022, Emergency Diesel Generator Fuel Oil System
4-OSP-075.5, Auxiliary Feedwater System Flow Path Verification
3-OSP-075.5, Auxiliary Feedwater System Flow Path Verification
P&ID 5613-M-3062, Safety Injection System

Section 1R05: Fire Protection

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

Section 1R06: Flood Protection Measures

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

Section 1R12: Maintenance Effectiveness

Maintenance Expert Panel Meeting Document, dated March 9, 2015
Maintenance Expert Panel Meeting Document, dated March 19, 2015

Section 1R15: Operability Determinations and Functionality Assessments

EN-AA-203-1001, Operability Determinations and Assessments
0-ADM-226, Operability Screening and Condition Reports
0-ADM-213, Technical Specification Related Equipment Out of Service Logbook
OP-AA-108-1000, Operator Burdens Program Management
ODI-CO-040, Oversight and Control of Operator Burdens

Section 1R18: Plant Modifications

EN-AA-203-1201, 10CFR Applicability and 10CFR50.59 Screening Reviews

LI-AA-101-1001, 10CFR 50.59 Changes, Tests and Experiments

Section 1R19: Post Maintenance Testing

0-ADM-737, Post Maintenance Testing

0-CMP-102.01, Troubleshooting and Repair Guidelines

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

LER 05000250-2014-004-00, Ultimate Heat Sink Temperature Limit Exceeded Due to
Environmental Conditions

AR 1979256 Root Cause Evaluation

Email from Gurcharan Matharu dated 07/18/2014, 1:03 pm

PI-AA-104-1000, Corrective Action

NOED 14-2-001 Approval Letter, dated July 23, 2014

60-meter Meteorology Tower Rainfall Data, June 1, to July 31, 2014

TPM Monitoring Station Rainfall Data, January 1, to July 31, 2014

Technical Specification 3.7.4, Ultimate Heat Sink

0-NOP-011.01, Intake Intrusion Monitoring and Mitigation