



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

July 25, 2014

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

**SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2014003 AND 05000389/2014003**

Dear Mr. Nazar:

On June 30, 2014, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on July 10, 2014, with Mr. DeBoer and other members of your staff.

This report documents one self-revealing finding and one NRC-identified finding of very low safety significance (Green). Both of these findings involved a violation of NRC requirements. 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 any NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the St. Lucie Power Plant.

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

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). Adams is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

M. Nazar

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Sincerely,

/RA/

Philip J. McKenna, Chief (Acting)
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosure: Inspection Report 05000335/2014003, 05000389/2014003
w/Attachment: Supplemental Information

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Letter to Mano Nazar from Philip J. McKenna dated July 25, 2014.

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05000335/2014003 AND 05000389/2014003

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-335, 50-389

License Nos: DPR-67, NPF-16

Report Nos: 05000335/2014003, 05000389/2014003

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

Facility: St. Lucie Plant, Units 1 & 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: April 1, 2014 to June 30, 2014

Inspectors: T. Morrissey, Senior Resident Inspector
J. Reyes, Resident Inspector

Approved by: Philip J. McKenna, Chief (Acting)
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2014003, 05000389/2014003; 04/01/2014 – 06/30/2014; St. Lucie Nuclear Plant, Units 1 & 2; Identification and Resolution of Problems; Follow-up of Events and Notice of Enforcement Discretion

The report covered a three-month period of inspection by the resident inspectors. The significance of inspection findings are indicated by their color (i.e., greater than Green, or Green, White, Yellow, or Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process," (SDP) dated June 2, 2011. The cross-cutting aspect was determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 19, 2013. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated July 9, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

Green. A self-revealing, non-cited violation (NCV) of Technical Specification (TS) 6.8.1, was identified which requires that written procedures be established, implemented, and maintained covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978, including safety-related activities carried out during operation of the reactor plant. The licensee failed to comply with Quality Instruction ENG-QI 1.0, Nuclear Engineering Design Control, when an unauthorized modification was implemented during maintenance on two auxiliary feedwater (AFW) valves. Consequently, the unauthorized modification was the direct cause of the failure of one of the valve stems. Corrective actions included the proper installation of new stems in the valves.

The licensee's failure to comply with Quality Instruction ENG-QI 1.0, Nuclear Engineering Design Control, and modifying the AFW valve and plug assembly by drilling and pinning at a different location than what was specified on the maintenance assembly procedure was a performance deficiency. The performance deficiency was determined to have more than minor significance because if left uncorrected, the failure to comply with the engineering design control procedure to ensure adequate assembly of AFW valves could lead to a more significant safety concern. Specifically, failure of an AFW pump discharge valve could result in an inadequate steam generator heat sink during a design basis accident. Using Manual Chapter 0609.04, Significance Determination Process (SDP) Initial Characterization of Findings, Table 2, dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. The finding occurred while the Unit was at power. Manual Chapter 0609 Appendix A, Significance Determination Process for Findings At-Power, Exhibit 2 - Mitigating Systems Screening Questions dated, June 19, 2012, was used to further evaluate this finding. The finding screened as Green because none of the logic questions under the cornerstone applied. The finding involved the cross-cutting area of Human Performance, in the aspect of Conservative Bias (H.14), in that, the licensee did not make a conservative decision to stop work when the maintenance procedure did not address installation of a used valve stem. Instead the licensee chose to move forward with the maintenance because the procedure did not specifically prohibit installation of a used stem. (Section 40A2.4)

Enclosure

Green. An NRC-identified non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, Design Control, was identified. The licensee's failure to translate design control measures to ensure operation of Unit 2 emergency diesel generators (EDGs) under worst-case environmental conditions was a performance deficiency. Specifically, since initial licensed operation in 1983, the licensee failed to ensure the Unit 2 EDGs were designed and built to operate under worst case high wind conditions. As a result, sustained high winds from specific directions could have impacted EDG radiator performance resulting in the unavailability of both Unit 2 EDGs. Corrective actions included modification of the EDG building to allow EDG operation under all postulated high wind conditions.

The performance deficiency was more than minor because it affected the design control attribute of the mitigating system cornerstone, and affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency could have resulted in the inoperability of both Unit 2 EDGs during sustained high wind conditions. Using Table 2 of Inspection Manual Chapter (IMC) 0609.04, "Significance Determination Process Initial Characterization of Findings" dated June 19, 2012; the inspectors concluded the finding affected the mitigating system cornerstone. The inspectors evaluated the finding using IMC 0609, Appendix A, The Significance Determination Process for Findings At-Power, Exhibit 2, dated June 19, 2012. The finding was determined to require a detailed risk evaluation by an NRC senior reactor analyst since the finding represented a loss of function. The regional senior reactor analyst performed a Phase 3 SDP analysis for the finding. The EDG impact would only occur in response to a Loss of Offsite Power (LOOP). The analysis considered the impact of the finding on an independent LOOP, by calculating the likelihood that the site wind conditions, absent a Hurricane, would occur at the same time as an independent LOOP event. In addition, the coincident or dependent LOOP was considered, by assuming the hurricane winds would impact the EDGs and would occur with a hurricane induced LOOP. Wind data was taken from National Weather Service records at Palm Beach International airport, which is the closest station to have both wind speed and direction historical records to determine the likelihood for non-hurricane high winds. Hurricane frequency data was taken for the Landfalling Hurricane Probability Project for St Lucie County. The Conditional Core Damage Probability was determined through the use of the NRC's plant risk models. EDG recovery, because the winds would not be likely sustained (both speed and direction) for greater than 6 hours, and the ability to crosstie Unit 2 emergency power to Unit 1 were major factors in the outcome. The screening analysis resulted in a combined risk which, even with conservative assumptions, was low enough for the finding to be characterized as Green. A cross-cutting aspect was not assigned to the finding since the finding does not represent current licensee performance. The condition existed since original construction of the plant. (Section 40A3.1)

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power (RTP). On June 5, power was lowered to approximately 82 percent RTP for several hours to support turbine valve testing. The unit was at 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period shutdown in Mode 5 (<200 °F) in a refueling outage. On April 22 the unit was restarted after the outage and reached 100 percent RTP on April 26. On June 23 power was reduced to 45 percent RTP in order to remove the 2B main feedwater pump from service. The 2B main feedwater pump's lube oil system was found to have water in it due to a leaking lube oil cooler tube. The lube oil cooler was repaired and the unit was returned to 100 percent RTP on June 25. The unit was at 100 percent power for the remainder of the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

.1 Hurricane Season Preparations

a. Inspection Scope

During the month of May, 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 licensee procedures ADM-04.01, Hurricane Season Preparation, and OP-AA-102-1002, Seasonal Readiness. The inspectors performed site walk downs of the below listed systems and areas to verify the licensee had made the required preparations. Corrective Action Program (CAP) action requests (ARs) were reviewed to determine if the licensee was identifying and resolving conditions associated with adverse weather preparedness.

- St. Lucie 230kV switchyard
- Unit 1 and Unit 2 intake cooling water (ICW) structures
- Unit 1 and Unit 2 component cooling water systems
- Unit 1 and Unit 2 ICW systems
- Unit 1 and Unit 2 turbine decks
- Unit 1 and Unit 2 AFW systems
- St. Lucie plant intake canal debris and turtle net
- St. Lucie plant storm drain retention pond system

b. Findings

No findings were identified.

Enclosure

.2 External Flooding Preparations

a. Inspection Scope

The inspectors performed walkdown inspections of Unit 1 and Unit 2 reactor auxiliary buildings (RABs), including doors, flood protection barriers, penetrations and the integrity of the perimeter structure. The inspectors reviewed the compensatory measures established for work associated with replacing Unit 1 below grade conduits that penetrate the RAB to ensure the integrity of the building would be maintained during any postulated flood condition. The inspectors walked down the site's storm drain retention ponds to verify they were in a satisfactory condition. In addition, the inspectors walked down Unit 1 and Unit 2 EDGs and fuel oil tanks, AFW pump areas and the turbine decks. The inspectors also reviewed the applicable Updated Final Safety Analysis Report (UFSAR) sections, technical specifications (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 (WOs) related to actual flooding or water intrusion events over the past year were also reviewed by the inspectors to assure that the licensee was identifying and resolving severe weather related issues that caused or could lead to external flooding of safety related equipment.

b. Findings

No findings were identified.

.3 Offsite and Alternate AC Power System Readiness

a. Inspection Scope

The inspectors evaluated the summer readiness of both the offsite and onsite alternate AC power systems for extreme summer weather. The inspectors walked down the Unit 1 and Unit 2 safety-related EDGs and the turbine driven AFW pumps to verify they would be available during a loss of offsite power event. The inspectors performed a walk down of the switchyard with plant personnel to verify the material condition of the offsite power sources was adequate. Open WOs for the offsite and onsite AC power systems were reviewed to ensure degraded conditions were properly addressed. The inspectors verified that licensee and transmission system operator procedures contained communication protocols addressing the exchange of appropriate information when issues arise that could impact the offsite power system. The inspectors verified that no equipment or operating procedure changes have occurred since the last performance of this inspection that would potentially affect the operation or reliability of the offsite or onsite AC power systems. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

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 and that those issues were documented in the CAP. Documents reviewed are listed in the Attachment.

- Unit 2, 2B EDG while the 2A EDG was out of service (OOS) for testing
- Unit 2, 2B high pressure safety injection (HPSI) pump and the 2B containment spray pump while the A emergency core cooling system (ECCS) was OOS for planned maintenance
- Unit 1, 1A HPSI, 1A low pressure safety injection (LPSI), and 1A containment spray trains while the 1B EDG was OOS for testing
- Unit 1, 1A EDG, 1A3 4160V engineered safeguards (ES) bus, and station blackout crosstie ES buses (1AB and 2AB) while the 1B EDG was OOS for a planned maintenance outage

b. Findings

No findings were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors conducted a detailed walkdown or review of the alignment and condition of the Unit 1B emergency diesel generator system to verify its capability to meet its design basis function. The inspectors utilized licensee procedures 1-NOP-59.01B, 1B Emergency Diesel Generator Standby, as well as other licensing and design documents to verify the system alignment was correct. During the walkdown, the inspectors verified 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 were 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. Pending design and equipment issues were reviewed to determine if the

identified deficiencies significantly impacted the system's functions. Items included in this review were the operator workaround list, the temporary modification list, system health reports, system description, and outstanding maintenance work requests/work orders (WOs). In addition, the inspectors reviewed the licensee's CAP to ensure that the licensee was identifying and resolving equipment alignment problems.

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors toured the following six plant areas during this inspection period to evaluate conditions related to control of transient combustibles and ignition sources, the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage or fire propagation. The inspectors reviewed these activities against provisions in the licensee's procedure AP-1800022, Fire Protection Plan, and 10 CFR Part 50, Appendix R. The licensee's fire impairment lists, updated on an as-needed basis, were routinely reviewed. In addition, the inspectors reviewed the CAP database to verify that fire protection problems were being identified and appropriately resolved. Documents reviewed are listed in the Attachment. The following areas were inspected:

- Unit 2, A and B 125-V DC safety-related battery rooms
- Unit 1, charging pump cubicles
- St. Lucie A and B train fire pumps and tank system
- Unit 2, Main steam isolation valves and main feed isolation valves steam trestle area
- Unit 1, A and B 125-V DC safety-related battery rooms
- Unit 1, A and B switchgear rooms

b. Findings

No findings were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

On May 7, 2014, the inspectors observed an unannounced fire drill that simulated a 2B ICW pump motor fire. 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 post drill critique

meeting, and implemented appropriate corrective actions as required. Specific attributes evaluated were: (1) proper wearing of turnout gear and self-contained breathing apparatus; (2) proper use and layout of fire hoses; (3) employment of appropriate firefighting 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. In addition, the inspectors reviewed the storage, training, expectations for use and maintenance associated with the self-contained breathing apparatus (SCBA) program. Documents reviewed are listed in the Attachment. This inspection is a partial completion of drill observations.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On May 22, 2014, the inspectors observed and assessed two licensed operator crews during two separate short evaluated simulator scenarios during continuing training on the control room simulator. The simulated scenarios included a failure of a containment fan cooler, a failed-open pressurizer spray valve, a lockout of an emergency service 6.9 KV buss and a reactor trip followed by a loss of coolant accident. Each scenario included an Emergency Alert classification and notification to the State. Documents reviewed are listed in the Attachment. The inspectors also reviewed simulator physical fidelity and specifically evaluated the following attributes related to the operating crews' performance:

- Clarity and formality of communication
- Ability to take timely action to safely control the unit
- Prioritization, interpretation, and verification of alarms
- Correct use and implementation of abnormal and emergency operation procedures, and emergency plan implementing procedures
- Control board operation and manipulation, including high-risk operator actions
- Oversight and direction provided by supervision, including ability to identify and implement appropriate TS actions, regulatory reporting requirements, and emergency plan classification and notification
- Crew overall performance and interactions
- Effectiveness of the post-evaluation critique

This inspection completes one sample under this inspection procedure.

b. Findings

No findings were identified.

.2 Control Room Observations

a. Inspection Scope

The inspectors observed and assessed licensed operator performance in the plant and main control room, particularly during periods of heightened activity or risk and where the activities could affect plant safety. Documents reviewed are listed in the Attachment. Specifically, the inspectors observed activities in the control room during the following three evolutions:

- April 9, Unit 2 cool down from normal operating pressure to implementation of shut down cooling in preparation to retrieve foreign material in the 2B steam generator
- April 22, Unit 2 initial criticality following refueling
- June 6, Unit 1 power reduction to approximately 82 percent RTP and subsequent restoration to 100 percent power to support turbine valve testing

The inspectors focused on the following conduct of operations attributes as appropriate:

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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the performance data and associated ARs for two equipment issues and the one maintenance rule periodic assessment as listed below to verify that the licensee's maintenance efforts met the requirements of 10 CFR 50.65 (Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants) and licensee administrative procedure ADM-17-08, Implementation of 10 CFR 50.65, The Maintenance Rule (MR). The inspectors focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk

significance, determination of MR a(1) and a(2) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors also interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors attended applicable expert panel meetings and reviewed associated system health reports. The inspectors verified that equipment problems were being identified and entered into the licensee's CAP. Documents reviewed are listed in the Attachment.

- AR 1960753, Unit 2 Containment Spray Iodine Removal System surveillance failures have not been evaluated for Maintenance Rule Functional Failures
- AR 1897892, Maintenance Rule Periodic Assessment (June 2011 – July 2013)
- AR 1967257, Isolated-phase bus duct cooling fan failure event was misclassified as not being a Maintenance Rule Functional Failure

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews, plant walkdowns, and control room inspections of the licensee's on-line and shutdown risk assessment of 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; and licensee procedure ADM-17.16, Implementation of the Configuration Risk Management Program. The inspectors also reviewed the effectiveness of the licensee's contingency actions to mitigate increased risk resulting from the degraded equipment. The inspectors interviewed responsible senior reactor operators on-shift, verified actual system configurations, and specifically evaluated results from the online risk monitor (OLRM) for the combinations of OOS risk significant systems, structures, and components (SSCs) listed below. Documents reviewed are listed in the Attachment.

- Unit 2, Mode 4, shutdown safety assessment (SSA) with main feed isolation valves, charging pumps 2A and 2C, atmospheric dump valve MV-08-18A and high pressure safety injection pump 2B OOS for planned maintenance
- Unit 2, SSA for Cold Mid-loop drain down operations with time-to-boil at 49 minutes, in preparations to retrieve foreign material from the reactor coolant system (RCS) side of the B steam generator
- Unit 2, on-line risk assessment with the 2B high pressure safety injection pump, 2B containment spray pump, and 2B low pressure safety injection pump OOS for planned maintenance

- Unit 1, on-line risk assessment with 1A EDG, 1A AFW pump, 1A LPSI and 1A HPSI pumps OOS for planned maintenance
- Unit 1, on-line risk assessment with 1B EDG, 1B LPSI and 1B HPSI pumps OOS for planned maintenance

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the following five ARs' interim dispositions and operability determinations or functionality assessments to ensure that they were properly supported and the affected SSCs remained available to perform their safety function with no increase in risk. The inspectors reviewed the applicable UFSAR, and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- AR 1955289, Unit 2 SE-07-3A Target rock hydrazine valve failed surveillance
- AR 1965277, Unit 2 SE-02-4, Pressurizer auxiliary spray valve body-to-bonnet weld defect
- AR 1966703, Unit 2 Shutdown cooling isolation valve V3658 exceeds stroke time
- AR 1967827, Unit 2 AFW actuation system C channel ground fault
- AR 1963361, Fire pump system corrosion on piping, pumps, and structural supports

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

For the seven maintenance WOs listed below, the inspectors reviewed the test procedures and either witnessed the testing or reviewed test records to determine whether the scope of testing adequately verified that the work performed was correctly completed and demonstrated that the affected equipment was functional and operable. The inspectors verified that the requirements of licensee procedure ADM-78.01, Post Maintenance Testing, were incorporated into test requirements. Documents reviewed are listed in the Attachment.

- WO 40260683, Maintenance on Target Rock valve SE-07-3B after surveillance failure
- WO 37019706, Leak rate test on penetration #10, after performing maintenance on purge supply isolation valve FCV-25-5
- WO 40305241, 40179485, and 40198881, stroke times and leak check after performing maintenance due to failed surveillances
- WO 40085593, Replace 2B AFW pump motor
- WO 40192450, Replace 1B charging pump motor
- WO 40184287, Replace 1A AFW pump discharge flow transducer
- WO 40216548, 1B EDG periodic maintenance and inspection outage

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

Unit 2 Refueling Outage SL2-21

a. Inspection Scope

The Unit 2 refueling outage started on March 3, 2014. Additional inspection activities associated with this outage were documented in NRC Integrated Inspection Report 05000335/2014002 and 05000389/2014002 (ADAMs accession No. ML14121A193).

Control and Risk Assessment

The inspectors reviewed the risk reduction methodology employed by the licensee during various refueling outage SL2-21 meetings including the outage command center (OCC) morning meetings and operations daily team meetings. The inspectors examined the licensee implementation of shutdown safety assessments during SL2-21 in accordance with licensee procedure OM-AA-101-1000, Shutdown Risk Management, to verify whether a defense in depth concept was in place to ensure safe operations and avoid unnecessary risk. In addition, the inspectors regularly monitored OCC activities, and interviewed responsible OCC management, to ensure system, structure, and component configurations and work scope were consistent with TS requirements, site procedures, and outage risk controls.

Outage Activities

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

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

Containment Closure

The inspectors evaluated the licensee's ability to close the containment equipment, personnel, and emergency hatches in a timely manner per procedure 2-GMM-68.02, Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches.

Reduced Inventory and Mid-Loop Conditions

The inspectors reviewed the planned activities associated with two periods of reduced inventory and mid-loop conditions established in order to remove and install steam generator 2B nozzle dams to support retrieval of a loose part and inspection of the primary side of the 2B steam generator. The inspectors verified the licensee had controls in place to govern mid-loop operation and appropriate mid-loop operation training was completed. The inspectors verified the necessary level instrumentation and means of adding inventory to the RCS were available.

Heat-up, Mode Transition, and Reactor Startup Activities

The inspectors examined selected TS, license conditions, license commitments and verified administrative prerequisites were being met prior to mode changes. The inspectors also reviewed measured RCS leakage rates, and verified containment integrity was properly established. The inspectors performed a containment sump closeout inspection prior to reactor plant start-up and conducted a containment walk down while Unit 2 was at normal operating pressure and temperature. The results of low power physics testing were discussed with Reactor Engineering and Operations personnel to ensure that the core operating limit parameters were consistent with the design. The inspectors witnessed portions of the RCS heat up, reactor startup, and power ascension in accordance with the following plant procedures:

- 2-PTP-91, Reload Startup Physics Testing
- 2-GOP-302, Reactor Startup Mode 3 to Mode 2
- 2-GOP-201, Reactor Plant Startup Mode 2 to Mode 1

Corrective Action Program

The inspectors reviewed ARs generated during SL2-21 to evaluate the licensee's threshold for initiating ARs. The inspectors reviewed ARs to verify priorities, mode holds, and significance levels were assigned as required. Resolution and implementation of corrective actions of several ARs were also reviewed for completeness. The inspectors routinely reviewed the results of Quality Assurance (QA) daily surveillances of outage activities.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following seven surveillance tests to verify that the tests met TS, UFSAR, and licensee procedural requirements. The inspectors verified the tests demonstrated the systems were capable of performing their intended safety functions and their operational readiness. In addition, the inspectors evaluated the effect of the testing activities on the plant to ensure that conditions were adequately addressed by the licensee staff and that after completion of the testing activities, equipment was returned to standby alignment required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP. Documents reviewed are listed in the Attachment.

In-Service Tests:

- 2-OSP-09.01C, 2C Auxiliary Feedwater Pump Code Run
- 1-OSP-09.01A, 1A Auxiliary Feedwater Pump Code Run

Surveillance Tests:

- 2-OSP-69.13A, ESF - 18 Month Surveillance for CIAS/CIS/CSAS - Train A
- 1-OSP-09.01A, 1A Auxiliary Feedwater Pump Code Run
- 1-OSP-22.04, Unit 1 Semi Annual Turbine Valve Test
- 1-SMI-09.43A, Auxiliary Feedwater Actuation System Monthly Functional Test Channel A

RCS Leakage Detection Surveillance:

- 2-OSP-01.03, Reactor Coolant System Inventory Balance

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness (EP)

1EP6 Drill EvaluationEmergency Preparedness Drillsa. Inspection Scope

On May 7, 2014 the inspectors observed the simulator control room and technical support center facility staff during a drill of the site emergency response organization to verify the licensee was properly classifying emergency events, making the required notifications, and making appropriate protective action recommendations. The scenario included an aircraft threat, a 2B ICW pump motor fire, a feed header failure, a total loss of main feedwater including AFW and a manual reactor trip. A Notice of Unusual Event emergency classification was entered and exited due to the aircraft threat. Plant conditions later degraded to a point where the licensee declared an Alert and later, a Site Area Emergency. During the drill the inspectors assessed the licensee's actions to verify that emergency classifications and notifications were made in accordance with licensee emergency plan implementing procedures (EIPs) and 10 CFR 50.72 requirements. The inspectors specifically reviewed the Notice of Unusual Event, Alert, and Site Area Emergency classifications and notifications were in accordance with licensee procedures EPIP-01, Classification of Emergencies and EPIP-02, Duties and Responsibilities of the Emergency Coordinator. The inspectors also observed whether the initial activation of the emergency response centers was timely and as specified in the licensee's emergency plan and the licensee identified critique items and drill weaknesses were captured in the CAP.

a. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator VerificationBarrier Integritya. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period April 1, 2013 through March 31, 2014, to verify the accuracy of the PI data reported during that period. PI definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, and licensee procedures ADM-25.02, NRC Performance Indicators, and LI-AA-204-1001, NRC Performance Indicator Guideline, 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

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identified the required data, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- Unit 1 RCS Leakage
- Unit 2 RCS Leakage
- Unit 1 RCS Activity
- Unit 2 RCS Activity

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Daily Review

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, and to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a screening of items entered daily into the licensee's CAP. This review was accomplished by reviewing daily printed summaries of action requests and by reviewing the licensee's electronic AR database. Additionally, reactor coolant system unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

b. Findings

No findings were identified.

.2 Annual Sample: Adverse Trend NRC Cross-Cutting Aspect P2

a. Inspection Scope

The inspectors performed an in-depth review of AR 1952327 which documented a licensee-identified adverse trend associated with three non-cited violations (NCVs) the licensee received in the last year with a cross-cutting aspect of not thoroughly evaluating problems (P2). The inspectors reviewed the associated root cause evaluation (RCE) to verify the RCE properly characterized the problem, proper RCE investigative techniques were utilized, and the root cause and corrective actions were appropriate. The inspectors verified the licensee's actions were in accordance with licensee procedures, PI-AA-204, Condition Reporting and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Actions.

b. Findings and Observations

No findings were identified. The inspectors found that the licensee's RCE for this adverse trend was comprehensive and thorough. The root cause was determined to be a lack of rigor and formality in the evaluations which led to the inadequate development of corrective actions. Corrective actions included establishing cradle-to-grave ownership of condition reports from screening to resolution.

.3 Semi-Annual Trend Review:

a. Inspection Scope

As required by Inspection Procedure 71152, Identification and Resolution of Problems, the inspectors performed a review of the licensee's CAP and associated documents to identify trends that could indicate the existence of a more significant safety issue. The inspectors' review was focused on repetitive equipment issues, but also considered the results of daily inspector CAP item screening discussed in section 4OA2.1, plant status reviews, plant tours, and licensee trending efforts. The inspectors' review nominally considered the six month period of January 2014 through June 2014, although some examples expanded beyond those dates when the scope of the issue warranted. The inspectors evaluated the licensee's administration of these selected condition reports in accordance with the CAP as specified in licensee procedures PI-AA-204, Condition Identification and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Action.

b. Findings and Observations

The inspectors identified a continuing adverse trend in the area of MR implementation (10 CFR 50.65). This trend was first documented in NRC Integrated Inspection Report 05000335/2013003 and 05000389/2013003 (ADAMS Accession No. 13211A161). The following discrepancies were noted and have been entered into the licensee's CAP:

- One train of the Unit 2 isophase cooling system failed and the intermittent failure of the other train resulted in the need to reduce power. The licensee's MR failure evaluation determined that this was not a functional failure. The inspectors questioned the licensee on this decision since the MR performance criteria for the system was not met as a result of the power reduction. The issue was later classified as a MR functional failure. (AR 1967257).
- During the review of ECCS floor drain system, the inspectors noted that previous drain valve failures over the last several years did not have a MR evaluation. The inspectors determined that the MR performance criteria established for this system was inadequate, in that, it was very unlikely that any valve failures would result in an MR a(1) determination. The licensee agreed with the inspector's assessment and placed the issue into the CAP (AR 1936612).
- During the course of MR inspections, the inspectors noted that several engineering personnel had a weak understanding of MR program

implementation. Specifically, several engineers mistakenly believed that a MR evaluation was not required for a component failure when the failure occurred during a time the component was not required to be Operable. Engineering management came to this same conclusion and documented the issue in the CAP as AR 1966199.

- In May 2014, the licensee Nuclear Oversight (NOS) organization determined that portions of the Maintenance Rule program continue to be less than effective in ensuring timely completion of MR a(1) action plan corrective actions (AR 1967792). This NOS finding required a second level escalation response by plant management in accordance with nuclear assurance procedure NA-AA-212-1000, Nuclear Oversight Escalation, since corrective actions for a previous NOS MR finding had not been addressed in a timely manner or were closed inappropriately.

.4 Annual Sample: Failure of Unit 2 Auxiliary Feedwater Motor Operated Valve MV-09-10

a. Inspection Scope

The inspectors performed an in-depth review of two apparent cause evaluation (ACE) reports, AR 01946428 and AR 01948274. The inspectors reviewed the circumstances and corrective actions that followed relating to maintenance on two Unit 2 AFW pump throttle valves in which one valve subsequently failed as a result of having reused a valve stem during maintenance. The inspectors completed an extent of condition review to determine if similar maintenance had been performed on other Unit 1 and Unit 2 AFW valves. The inspectors interviewed plant personnel and evaluated the licensee's administration of the selected ARs and verified the licensee's actions were in accordance with licensee procedures, PI-AA-204, Condition Reporting and Screening Process, and PI-AA-205, Condition Evaluation and Corrective Actions.

b. Findings and Observations

The inspectors found that ACE AR 01948274 lacked information and some information was inconsistent with the apparent cause. For example, the inspector's independent investigation identified that maintenance technicians had been interviewed and it was not clear whether information gathered had been utilized in determining the apparent cause. A statement on the ACE which read "Existing maintenance procedure does prohibit re-use of the lower stem if it is un-pinned from the plug during maintenance," was incorrect and did not support the apparent cause. The inspectors determined that the old stems were reused because the new stems were too short for the application. This was not addressed in the ACE. The inspectors noted that for both valves, completed procedure MMP 81.03, Inspection and Maintenance of WKM 70-28 Model Valves, step 7.3.4.G, which read "Drill the stem and plug thru the guide hole," had been circled and slashed indicating completion. This was not the case because the reused stem had been drilled at a different location other than through the factory provided guide hole in the plug. The inspectors interviewed the lead evaluator for the ACE and found that the investigation

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was still ongoing despite the fact that the ACE had been designated as complete in the CAP database. This was outside the CAP process since they were informally continuing this investigation. These issues were communicated to the Licensing and the Performance Improvement managers. The licensee acknowledged that the ACE was incomplete and inadequate, and it was then formally reopened. A new lead evaluator was assigned to complete the ACE. The licensee initiated AR 01968505 to address the issues associated with the original ACE report.

The inspectors found that during maintenance on valves MV-09-09 and MV-09-10, the licensee did not implement the station's Nuclear Engineering Design Control procedure to obtain approval to drill a new hole through the plug and to drill the stem at the new location. Additionally, procedure MMP-81.03 was not revised to address the new hole location, although field notes written in the work order did provide the details describing that the pinning had been performed at another location. The inspectors found that the licensee had not entered the issue regarding the short stems into the CAP when it was first identified. The inspectors interviewed engineering management and found that prior to the MV-09-10 valve failure, engineering was not aware that an unauthorized modification had been implemented to relocate the pinning location of the reused stem. The inspectors identified a violation of regulatory requirements relating to installation of an unapproved modification as follows.

Introduction: A Green, self-revealing, non-cited violation (NCV) of Technical Specification (TS) 6.8.1, was identified which requires that written procedures be established, implemented, and maintained covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978, including safety related activities carried out during operation of the reactor plant. The licensee failed to comply with Quality Instruction ENG-QI 1.0, Nuclear Engineering Design Control, when an unauthorized modification was implemented during maintenance on two AFW valves. Consequently, the unauthorized modification was the direct cause of the catastrophic failure of one of the valve stems.

Description: During the St. Lucie Unit 2 refueling outage, SL2-20, in October 2012 the licensee completed preventive maintenance (PM) on AFW pump discharge motor operated valves MV-09-09 and MV-9-10. In March 2014 during refueling outage SL2-21 while attempting to fill the 2B steam generator to 75 percent wide range level, the valve stem on MV-09-10 failed causing isolation of feed water to the steam generator. The valve was not required to be operable per TS at the time of the failure since the unit was shutdown. AR 01946428 was written to investigate technical aspects of the stem failure. The failure mechanism was identified to be low stress high cycle fatigue. Improper valve assembly in October 2012 was the primary contributor to the failure. The valve and plug threaded interface did not have complete thread engagement at the pinning location. Specifically the area on the plug above the pinned hole had no threads and consequently in that area the plug had no thread engagement with the stem. The past operability evaluation associated with valve MV-09-10 determined that the valve would have performed its safety function when it was required to be operable since the differential pressure stresses across the valve would have been lower when filling a pressurized steam generator. The valve failed under high

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differential pressure conditions when it was used to fill a steam generator at atmospheric pressure. For the second valve, MV-09-09, the pinned location had been drilled slightly lower which resulted in complete thread engagement around the pinned location. Additionally, non-destructive examination results showed no indication of fatigue cracking for MV-09-09. AR 01948274 was subsequently written to investigate the human performance aspects that contributed to this event. The PM utilized maintenance procedure MMP-81.03, Inspection and Maintenance of WKM 70-28 Model Valves. MMP-81.03 is a safety related continuous use procedure and implements the requirements for inspecting the valve stem and plug assembly to determine if a new stem is required and provides the installation instructions for drilling and pinning a new stem using the plug's pre-drilled guide hole. It was identified during the maintenance that the new valve stems provided were too short. Maintenance supervision approved reusing the old stems. The pinning was accomplished by modifying the pinning location and drilling through the plug and stem at a higher location and ninety degrees away from the originally pinned location on the plug, i.e., not using the pre-drilled guide hole on the plug. However, drilling a new guide hole in the plug was not addressed in procedure MMP-81.03. Maintenance did not recognize this as being a modification to the valves. The issue was not placed in the CAP and the engineering organization was not informed.

Nuclear Engineering Design Control procedure ENG-Q1 1.0 provides requirements and guidance for controlling design changes for plant related structures, systems, and components. This procedure should have been utilized to determine the acceptability of drilling a hole through the valves' plug and stem at the new location.

Analysis: The licensee's failure to comply with Quality Instruction ENG-Q1 1.0, Nuclear Engineering Design Control, and modifying the AFW valve and plug assembly by drilling and pinning at a different location than what was specified on the maintenance assembly procedure was a performance deficiency. The performance deficiency was more than minor because if left uncorrected, the failure to comply with the engineering design control procedure to ensure adequate assembly of AFW valves could have led to a more significant safety concern. Specifically, failure of an AFW pump discharge valve could result in an inadequate steam generator heat sink during a design basis accident. Using Manual Chapter 0609.04 Significance Determination Process Initial Characterization of Findings Table 2 dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. The finding occurred while the Unit was at power. Manual Chapter 0609 Appendix A, Significance Determination Process (SDP) for Findings At-Power, Exhibit 2 - Mitigating Systems Screening Questions dated, June 19, 2012, was used to further evaluate this finding. The finding screened as green because none of the logic questions under the cornerstone applied. The finding involved the crosscutting area of Human Performance, in the aspect of Conservative Bias (H.14), in that, the licensee did not make a conservative decision to stop work when the maintenance procedure did not address installation of a used valve stem. Instead the licensee chose to move forward with the maintenance because the procedure did not specifically prohibit installation of a used stem.

Enforcement: Unit 2 Technical Specification 6.8.1, Procedures and Programs, requires, in part, that written procedures be implemented covering activities referenced in Regulatory Guide 1.33, Revision 2, dated February 1978, including safety related activities carried out during operation of the reactor plant. Section 9.a, Procedures for Performing Maintenance, states in part, maintenance that can affect the performance of safety-related equipment should be properly pre-planned and performed in accordance with written procedures, documented instructions, or drawings appropriate to the circumstances. Quality Instruction, ENG-QI 1.0, Nuclear Engineering Design Control, Section 5.6, Design Change Vehicle Determination, provides the requirements to complete a design change maintenance support package to support maintenance activities when a configuration or a design change is necessary. Contrary to this, in October 2012 during maintenance on valves MV-09-09 and MV-09-10, the licensee reused the valve stems and drilled and pinned the stem and plug assemblies at a location not specified on the maintenance assembly procedure without completing a design change maintenance support package. Consequently in March 2014, MV-09-10 failed causing isolation of feedwater to the 2B steam generator. Immediate corrective actions included installing new stems on MV-09-09 and MV-09-10 and revising the maintenance procedure to prohibit re-use of a valve stem if unpinned during maintenance. Because the licensee entered the issue into their CAP as AR 1948274 and the finding is of very low safety significance (Green), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000389/2014003-01, Failure to Follow the Nuclear Design Control Procedure for Auxiliary Feedwater Valves.

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

.1 (Closed) Licensee Event Report (LER) 05000389/2013-005-00 Unanalyzed Condition Affecting Emergency Diesel Generators

a. Inspection Scope

The inspectors checked the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. Immediate corrective actions included the installation of temporary wind barriers that allowed the Unit 2 emergency diesel generators (EDGs) to remain operable with sustained winds up to 74 miles per hour (mph). The inspectors' review of the temporary wind barrier modification was documented in NRC Integrated Inspection Report 05000335/2014002 and 05000389/2014002 (ADAMS Accession No. ML14121A193).

b. Findings

Introduction: An NRC-identified green non-cited violation (NCV) of 10 CFR Part 50, Appendix B, Criterion III, "Design Control," was identified. The licensee's failure to implement design control measures to verify the adequacy of the Unit 2 emergency diesel generators (EDGs) cooling system design to ensure operation of the EDGs under worst-case environmental conditions was the performance deficiency. Specifically, since initial licensed operation in 1983, the licensee failed to ensure the Unit 2 EDGs were designed and built to operate under worst case high wind

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conditions. As a result, sustained high winds from specific directions could have impacted EDG radiator performance resulting in the unavailability of both Unit 2 EDGs.

Description: On December 19, 2013, the licensee determined that sustained high winds could result in not having adequate engine heat removal to support continuous operation of the Unit 2 EDGs. The licensee's evaluation was initiated when the NRC requested all licensees with air-cooled EDGs to determine whether EDG radiator performance could be impacted by winds blowing in the opposite direction of the radiator cooling air.

Each St. Lucie EDG consists of one generator with two diesel engines. The licensee determined that wind exceeding 47 miles per hour (mph) from specific directions could result in backpressure at the east and west radiator exhaust vents for both EDGs and could potentially decrease EDG radiator air flow to unacceptable values. This could result in both Unit 2 EDGs not being able to perform their safety function of supplying emergency power under worst case wind conditions. The Unit 1 EDGs were not affected since the Unit 1 EDG air-cooled radiators exhaust vertically through the top of the building.

The licensee utilized a computational fluid dynamic (CFD) model to verify the acceptability of a permanent design change that was developed for the EDG radiator exhaust vents. The CFD model showed a need to install a wind diverter at the 2B Emergency Diesel Building (EDB) air intake. All permanent modifications were installed prior to the onset of hurricane season (June 1, 2014). The CFD model was used to verify the Unit 1 EDGs were not impacted by high winds.

Analysis: The failure to implement design control measures to verify the adequacy of the Unit 2 EDG cooling system design to ensure operation of the EDGs under worst-case environmental conditions was a performance deficiency. The performance deficiency was more than minor because it was associated with the design control attribute of the mitigating system cornerstone, and affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Specifically, the performance deficiency resulted in a condition where sustained high winds from specific directions could have impacted EDG radiator performance resulting in the unavailability of both Unit 2 EDGs. Using Table 2 of Inspection Manual Chapter (IMC) 0609.04, "Significance Determination Process Initial Characterization of Findings," dated June 19, 2012; the inspectors concluded the finding affected the mitigating system cornerstone. The inspectors evaluated the finding using Exhibit 2 of IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power," dated June 19, 2012. The inspectors determined that a detailed risk evaluation by an NRC senior reactor analyst was required since the finding was associated with a loss of EDG function. The regional senior reactor analyst performed a Phase 3 SDP analysis for the finding. The EDG impact would only occur in response to a loss of offsite power (LOOP). The analysis considered the impact of the finding on an independent LOOP, by calculating the likelihood that the site wind conditions, absent a Hurricane, would occur at the same time as an independent LOOP event. In addition, the coincident or dependent LOOP was

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considered, by assuming the hurricane winds would impact the EDGs and would occur with a hurricane induced LOOP. Wind data was taken from National Weather Service records at Palm Beach International airport, which is the closest station to have both wind speed and direction historical records to determine the likelihood for non-hurricane high winds. Hurricane frequency data was taken for the Landfalling Hurricane Probability Project for St. Lucie County. The Conditional Core Damage Probability was determined through the use of the NRC's plant risk models. EDG recovery, because the winds would not be likely sustained (both speed and direction) for greater than 6 hours, and the ability to crosstie Unit 2 emergency power to Unit 1 were major factors in the outcome. The screening analysis resulted in a combined risk, even with conservative assumptions, was low enough for the finding to be characterized as Green. A cross cutting aspect was not assigned to the finding since the finding did not represent current licensee performance. The condition existed since original construction of the plant.

Enforcement: 10 CFR Part 50, Appendix B, Criterion III, "Design Control," states, in part, that measures shall be established to assure the design basis for those structures, systems, and components to which this appendix applies are correctly translated into specifications and drawings; and that the design control measures shall provide for verifying or checking the adequacy of design. UFSAR Section 3.1.2, "Criterion 2-Design Basis for Protection against Natural Phenomena," states, in part, that structures, systems, and components important to safety shall be designed to withstand effects of natural phenomena such as hurricanes without loss of capability to perform their safety function. UFSAR Section 3.3.1, "Hurricane Wind Criteria," states that the maximum design hurricane wind speed is 194 mph for a probable maximum hurricane (PMH). UFSAR Section 9.5.5.1, states, in part, that each diesel generator cooling water system is designed to perform its function under the same environmental conditions as the diesel generator set which it serves. In addition, "St. Lucie Unit 2 Emergency Diesel Generator System Design Basis Document (DBD-EDG-2)," Section 7.16.1, specifies that the radiator shall, in conjunction with the radiator fan, provide sufficient heat removal capability to maintain proper engine operation under all loading conditions, assuming the worst case environmental conditions." Contrary to the above, the licensee failed to assure the design basis high wind condition was correctly translated into specifications and drawings for the Unit 2 EDGs. As a result, the availability of both Unit 2 EDGs could have been adversely impacted by sustained high winds. Because the licensee entered the issue into their corrective action program as AR 1928517, and the finding is of very low safety significance (Green), this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000389/2014003-02, Failure to Design the Emergency Diesel Generators to operate under Worst Case Environmental Conditions.

4OA5 Other Activities

Review of Institute of Nuclear Power Operations (INPO) Reports

The inspectors reviewed the St. Lucie Accreditation Report for operations training, dated May 2014, to ensure that any issues identified were consistent with the NRC perspectives of St. Lucie plant performance.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. DeBoer and other members of licensee management on July 10, 2014. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

ATTACHMENT: SUPPLEMENTAL INFORMATION

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KEY POINTS OF CONTACT

Licensee personnel:

N. Bach, Chemistry Manager
M. Baughman, Training Manager
E. Belizar, Projects Manager
J. Connolly, Engineering Director
B. Coffey, Plant General Manager
D. DeBoer, Operations Director
J. Jensen, Site Vice President
E. Katzman, Licensing Manager
C. Martin, Health Physics Manager
R. McDaniel, Fire Protection Supervisor
J. Piazza, Maintenance Director
P. Rasmus, Assistant Operations Manager
M. Snyder, Nuclear Quality Assurance Manager
C. Workman, Security Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000335/2014003-01	NCV	Failure to Follow the Nuclear Design Control Procedure for Auxiliary Feedwater Valves (Section 4OA2.4)
05000389/2014003-02	NCV	Failure to Design the Emergency Diesel Generators to Operate Under Worst Case Environmental Conditions (Section 4OA3.1)

Closed

05000389/2013-005-00	LER	Unanalyzed Condition Affecting Emergency Diesel Generators (Section 4OA3.1)
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LIST OF DOCUMENTS REVIEWED

Section 1R01: Adverse Weather Protection

OP-AA-102-1002, Seasonal Readiness
0-AOP-53.02, Low Voltage Switchyard Voltage
0-AOP-53.03, High Voltage Switchyard Voltage
WM-AA-200, Work Management Process Overview
ADM-16.01, PSL Switch Yard Access / Work Control
WO 39003054, EC 281564 ECCS Pipe Tunnel; Replace Conduits

Section 1R04: Equipment Alignment

1-NOP-03.11, High Pressure Safety Injection Initial Alignment
2-NOP-59.01B, 2B Emergency Diesel Generator Standby Alignment
1-NOP-59.01A, 1A Emergency Diesel Generator Standby Alignment
1-NOP-52.02, Alignment of 1AB Buses and Components
2-NOP-52.02, Alignment of 2AB Buses and Components
2-NOP-03.11, High Pressure Safety Injection Initial Alignment
1-NOP-03.21, Low Pressure Safety Injection Initial Alignment
1-NOP-07.41, Containment Spray System Initial Alignment
2-NOP-07.41, Containment Spray System Initial

Section 1R05: Fire Protection

ADM-0005728, Fire Protection Training, Qualification and Requalification
ADM-1800022, Fire Protection Plan
AP-1-1800023, Unit 1 Fire Fighting Strategies
AP-2-1800023, Unit 2 Fire Fighting Strategies
RP-SL-106-1004, Inspection and Maintenance of Respiratory Protection Equipment

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

2-EOP-01, Standard Post Trip Actions
EPIP-01, Classification of Emergencies
EPIP-02, Duties and Responsibilities of the Emergency Coordinator.
2-NOP-01.02, Reactor Coolant Pump Operation
2-GOP-305, Reactor Plant Cool Down – Hot Standby To Cold Shutdown
2-NOP-03.05, Shutdown Cooling
2-PTP-91, Unit 2 Initial Criticality Following Refueling
1-GOP-123, Turbine Shutdown - Full Load to Zero Load

Section 1R12: Maintenance Effectiveness

ER-AA-100-2002, Maintenance Rule Program Administration
SCEG-004, Guideline for Maintenance Rule Scoping, Risk Significant Determination, and Expert Panel Activities
AR 1962269, 2013 Maintenance Rule Self-Assessment Review

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

OP-AA-104-1007, Online Aggregate RiskWCG-016, Online Work Management
 ADM-09.14, Reduced Inventory / Mid-Loop
 ADM-17.16, Implementation of The Configuration Risk Management Program
 ADM-09.23, Shutdown Safety Assessment and Controls
 2-NOP- 01.04, RCS Reduced Inventory and Mid-Loop Operations
 2-AOP-03.02, Shutdown Cooling Abnormal Operations

Section 1R15: Operability Determinations and Functionality Assessments

EN-AA-203-1001, Operability Determinations and Functionality Assessments

Section 1R19: Post Maintenance Testing

ADM-78.01, Post Maintenance Testing

Section 1R20: Refueling and Other Outage Activities

ADM-09.14, Reduced Inventory / Mid-Loop
 ADM-09.23, Shutdown Safety Assessment
 2-GMM-68.02, Emergency Closure of Containment Penetrations, Personnel Hatch, and Equipment Hatches
 2-GMM-01.02A, Reactor Vessel Maintenance – Sequence of Operation Component Removal
 2-NOP-03.05, Shutdown Cooling
 2-NOP-01.03, Draining RCS
 2-NOP-01.04, RCS Reduced Inventory and Mid-Loop Operation
 AP-0010145, Shutdown Cooling Controls
 2-GOP-201, Reactor Plant Startup - Mode 2 To Mode 1
 2-GOP-302, Reactor Plant Startup - Mode 3 To Mode 2
 2-GOP-303, Reactor Plant Heatup - Mode 3 <1750 To Mode 3 >1750
 2-GOP-502, Data Sheets Required For Heatup
 2-GOP-504, Reactor Plant Heatup - Mode 5 to Mode 4

Section 1R22: Surveillance Testing

ADM-29.02, ASME Code Testing of Pumps and Valves
 2-OSP-09.01B, 2B Auxiliary Feedwater Pump Code Run