



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

November 5, 2015

EA-15-204

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

**SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2015003 AND 05000389/2015003 AND EXERCISE OF
ENFORCEMENT DISCRETION**

Dear Mr. Nazar:

On September 30, 2015, 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 October 13, 2015, with Mr. Costanzo and other members of your staff.

This report documents one NRC-identified finding and one self-revealing finding of very low safety significance (Green). Both findings involved violations of NRC requirements. Additionally, the NRC has identified a Severity Level IV violation, under the traditional enforcement process, with no associated finding. Because of their very low safety significance, and because the issues were entered into your corrective action program, the NRC is treating these issues as non-cited violations (NCVs) consistent with Section 2.3.2.a of the NRC Enforcement Policy.

In addition, contrary to Technical Specification (TS) 3.5.1, "Safety Injection Tanks (SIT)," requirements, Unit 2 operated with the 2B2 SIT inoperable for longer than the TS allowed completion time due to a through-wall crack on its discharge pipe. Although a violation of TS occurred, the violation was not attributable to an equipment failure that was avoidable by reasonable licensee quality assurance measures or management controls. Therefore, the TS 3.5.1 violation was not associated with a licensee performance deficiency. The NRC concluded that the violation would normally be characterized as a Severity Level IV violation based on its very low safety significance since the pipe flaw did not impact the functionality of the 2B2 SIT. Based on these facts, I have been authorized, after consultation with the Director of the Office of Enforcement, and the Regional Administrator, to exercise enforcement discretion in accordance with Section 2.2.4.d and 3.5 of the Enforcement Policy and refrain from issuing enforcement for the violation. This violation will not be considered in the assessment process or the NRC's Action Matrix.

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

Joel T. Munday, Director
Division of Reactor Projects

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

Enclosure:
IR 05000335/2015003, 05000389/2015003
w/Attachment: Supplementary Information

cc Distribution via ListServ

M. Nazar

2

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 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/

Joel T. Munday, Director
Division of Reactor Projects

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

Enclosure:
IR 05000335/2015003, 05000389/2015003
w/Attachment: Supplementary Information

cc Distribution via ListServ

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE
ADAMS: Yes ACCESSION NUMBER: ML15309A146 SUNSI REVIEW COMPLETE FORM 665 ATTACHED

OFFICE	RII:DRP	RII:DRP	RII:DRP	RII:DRP	NRO	RII:EICS	RII:DRP
SIGNATURE	TXM1 via email	RJR1 via email	TLH4 via email	SPS via email	AMT3 via email	AAV via email	BDB3
NAME	TMorrissey	RReyes	THoeg	SSanchez	AThomas	AVargas	BBishop
DATE	11/3/2015	11/3/2015	11/4/2015	11/3/2015	11/3/2015	11/3/2015	11/3/2015
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
OFFICE	RII:DRP	RII:DRP	RII:DRP				
SIGNATURE	LJB4 via email	DLG2	JTM				
NAME	LSuggs	DGameroni	JMunday				
DATE	11/3/2015	11/3/2015	11/5/2015				
E-MAIL COPY?	YES NO	YES NO	YES NO				

Mr. Nazar

3

Letter to Mano Nazar from Joel T. Munday dated November 5, 2015.

SUBJECT: ST. LUCIE PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2015003 AND 05000389/2015003 AND EXERCISE OF
ENFORCEMENT DISCRETION

DISTRIBUTION:

D. Gamberoni, RII

L. Gibson, RII

OE Mail

RIDSNRRDIRS

PUBLIC

RidsNrrPMStLucie Resource

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-335, 50-389

License Nos: DPR-67, NPF-16

Report Nos: 05000335/2015003, 05000389/2015003

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

Facility: St. Lucie Plant, Units 1 & 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: July 1, 2015 to September 30, 2015

Inspectors: T. Morrissey, Sr. Resident Inspector
J. Reyes, Resident Inspector
T. Hoeg, Sr. Resident Inspector Turkey Point (Section 1R01)
S. Sanchez, Sr. Emergency Preparedness Inspector (Section 1R01)
A. Vargas, Project Engineer (Section 4OA3.4)
A. Thomas, General Engineer (Training)

Approved by: Joel T. Munday, Director
Division of Reactor Projects

Enclosure

SUMMARY

IR 05000335/2015003, 05000389/2015003; 07/01/2015 – 09/30/2015; St. Lucie Plant, Units 1 & 2; Operability Determinations and Functionality Assessments; Follow-up of Events and Notices of Enforcement Discretion.

The report covered a three-month period of inspection by the resident inspectors and specialist inspectors from the Region II Office. 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 April 29, 2015. Cross-cutting aspects are determined using IMC 0310, "Aspects Within the Cross-Cutting Areas," dated December 4, 2014. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated February 4, 2015. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 5.

NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green: An NRC-identified, NCV of Technical Specification (TS) 6.8.1, Procedures and Programs, was identified for the licensee's failure to implement written procedures covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. Specifically, the licensee failed to follow procedural requirements to properly secure a pedestal fan positioned on a wheeled cart to the extent required to prevent a potential for adverse interaction with safety-related systems, structures or components (SSCs) during a design basis seismic event. Failure to control equipment located near safety-related SSCs to prevent the equipment from interacting with safety-related SSCs during a design basis seismic event was a performance deficiency. Immediate corrective actions included removing the cart and fan assembly from the area and entering this issue into the corrective action program.

The performance deficiency was more than minor because the issue was associated with the Mitigating Systems Cornerstone attribute of Protection Against External Factors (seismic) and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related SSCs to respond to initiating events to prevent undesirable consequences. Specifically, during a design basis seismic event the unsecured cart and unrestrained fan could have damaged the emergency core cooling system low and high pressure safety injection flowrate transmitters causing control room operators to have a loss of safety injection flowrate indication and a small amount of system leakage during accident mitigation. 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. 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 the inspectors answered "No" to all four screening questions. The finding involved the cross-cutting aspect in the area of human performance associated with training because the organization failed to provide training and ensure knowledge transfer to maintain a knowledgeable,

technically competent workforce and instill nuclear safety values to ensure temporarily placed equipment located near safety-related SSCs was adequately secured to prevent interaction during a seismic event [H.9] (Section 1R15).

Cornerstone: Initiating Events

- Severity Level IV: The NRC identified an NCV of 10 CFR 50.72(b)(3)(iv)(A) for the licensee's failure to notify the NRC within 8 hours of an event that was not part of a pre-planned sequence which resulted in a valid actuation of an emergency AC electrical power system. During Unit 2's refueling outage with Unit 2 in Mode 5 and the 2A emergency diesel generator (EDG) properly tagged out of service for pre-planned maintenance, a phase-to-phase fault on the 6.9kV non-segregated bus from the 2A startup transformer (SUT) to the non-safety related 2A1 bus caused the 1A and 2A SUTs supply breakers to open. The safety related 4.16kV 2A3 bus experienced an under voltage condition which generated a valid actuation signal for the 2A EDG. The licensee failed to recognize this event as reportable pursuant to 10 CFR 50.72(b)(3)(iv)(A). The licensee generated corrective actions (AR 2075703) which included restoring compliance within a reasonable period of time after the violation was identified, and training the appropriate personnel to understand why the situation was reportable pursuant to 10 CFR 50.72.

The inspectors determined that the failure to report required plant events or conditions to the NRC had the potential to impede or impact the regulatory process. As a result, the NRC dispositioned this violation of 10 CFR 50.72 using the traditional enforcement process instead of the SDP. The inspectors determined that this issue was more than minor because it is similar to a Severity Level IV example provided in Section 6.9 of the NRC Enforcement Policy. Cross-cutting aspects are not assigned to traditional enforcement violations (Section 4OA3.2).

- Green: A Green, self-revealing, NCV of TS 6.8.1 was identified for the licensee's failure to adequately implement surveillance procedures during reactor protection system (RPS) testing. Specifically, the licensee failed to implement as-written operations surveillance procedure 1-OSP-63.01, "RPS Logic Matrix Test," when operators failed to close two trip circuit breakers (TCBs) prior to proceeding to the next section of the procedure. This resulted in an unplanned automatic reactor trip when a second pair of TCBs were opened. Corrective actions completed for this event included a human performance review that was conducted by the shift manager, operations director and plant general manager, initially implementing around the clock management oversight, and revising the RPS logic matrix test procedure to change it from a reader/doer procedure to a procedure with more concurrent verification steps. The licensee entered this issue into their corrective action program as AR 2065821.

The licensee's failure to follow procedure 1-OSP-63.01, "RPS Logic Matrix Test," as-written is a performance deficiency. This performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events Cornerstone and it adversely affected the associated cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions and resulted in an actual plant trip. The inspectors evaluated the risk of this finding using IMC 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings" and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." The inspectors determined that the finding was of very low safety

significance because it did not result in both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions would not be available.

The finding involved the cross-cutting area of human performance, with an aspect of avoiding complacency (H.12), in that the licensee failed to ensure that personnel effectively used human performance tools during the logic matrix test to ensure procedure steps were completed as required (Section 4OA3.3).

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at 100 percent rated thermal power (RTP). On August 9, 2015, the reactor automatically tripped from 100 percent RTP during reactor protection system (RPS) logic matrix testing. The unit was restarted on August 11, 2015, and reached 100 percent RTP on August 12, 2015. The unit was at 100 percent power for the remainder of the inspection period.

Unit 2 began the inspection period at 100 percent RTP. On September 8, 2015, the unit was shut down for a planned refueling outage. The unit was in a defueled condition at the end of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

Readiness for Impending Adverse Weather Conditions

a. Inspection Scope

During the week of August 24, 2015 while Unit 1 and Unit 2 were at full power operation, the inspectors reviewed the status of licensee actions in accordance with Administrative Procedure AP-0005753, "Severe Weather Preparations," when Tropical Storm Erika was approaching the area. The inspectors verified conditions were met for entering the procedure and that equipment status was verified as directed by the procedure. Additionally, the inspectors attended the licensee's hurricane preparation status and priorities meetings to assess whether the licensee's priorities were commensurate with the status of the operating units and that hurricane staffing was adequately being addressed. The inspectors verified that items impacting storm preparations were placed in the licensee's corrective action program (CAP). Additional procedures reviewed are listed in the Attachment. The inspectors performed a walk down of the following equipment on both units that are exposed to outside weather conditions to identify any potential adverse conditions:

- Unit 1 and Unit 2 turbine buildings
- Unit 1 and Unit 2 component cooling water (CCW) pump areas
- Unit 1 and Unit 2 emergency diesel generator (EDG) buildings
- Unit 1 and Unit 2 EDG fuel oil storage tank area
- Unit 1 and Unit 2 intake cooling water (ICW) systems and structures
- Unit 1 and Unit 2 auxiliary feed water (AFW) systems
- St. Lucie 230kV switch yard

This inspection constitutes one inspection sample.

b. Findings

No findings were identified. The site did not experience tropical force winds.

1R04 Equipment AlignmentPartial Equipment Walkdownsa. Inspection Scope

The inspectors conducted 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 the issues were documented in the licensee's CAP. This inspection constitutes four samples as noted below. Documents reviewed are listed in the Attachment.

- Unit 1, 1A and 1B charging pumps while the 1C charging pump was out of service (OOS) for planned maintenance
- Unit 1, 1B EDG while 1A EDG was OOS for unplanned maintenance
- Unit 1, 1B low pressure safety injection (LPSI), 1B high pressure safety injection (HPSI), 1B containment spray, and 1A HPSI pumps while the 1A LPSI and the 1A containment spray pumps were OOS
- Unit 1, 1A EDG after testing and being restored to operable status

b. Findings

No findings were identified.

1R05 Fire ProtectionFire Area Walkdownsa. Inspection Scope

The inspectors toured the plant areas listed below during this inspection period to evaluate conditions related to control of transient combustibles, ignition sources, and the material condition and operational status of fire protection systems including fire barriers used to prevent fire damage 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. This inspection constitutes five samples. The following areas were inspected:

- Unit 2, reactor auxiliary building (RAB) 43' elevation heating ventilation and air conditioning (HVAC) room
- Unit 2, 2A HPSI pump, 2A LPSI pump, and 2A containment spray pump area

- Unit 1, control room air conditioning room and the CCW head tank room
- Unit 1, 1A and 1B boric acid storage tank and pump rooms
- Unit 2, reactor containment building (RCB)

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Underground Manhole Inspections

a. Inspection Scope

The inspectors performed inspections of Unit 1 manholes MH137, MH129, and MH130 containing safety related cables as shown on the licensee drawings listed in the Attachment. The inspectors verified cables were not submerged in water, cable support structures were not damaged, splices (if present) appeared intact, and adequate drainage was provided. The inspectors interviewed the responsible licensee personnel performing manhole inspections to determine whether they were knowledgeable of the inspection requirements contained in work orders (WOs) 40359100 and 40340573. The inspection of the three manholes completes the annual inspection of safety-related manholes.

b. Findings

No findings were identified.

.2 Internal Flooding

a. Inspection Scope

The inspectors conducted a walkdown of the Unit 1 B train LPSI, HPSI, and containment spray pump flood area which included checks of building structure drainage sumps to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed Unit 1 Updated Final Safety Analysis Report (UFSAR), Section 3.4, "Water Level (Flood) Design," UFSAR Table 3.2-1, "Design Classification of Systems, Structures, and Components (SSC)" and Chapter 9.5A, Section 3.0 that describes the emergency core cooling system (ECCS) pump room flooding analysis. The inspectors also reviewed plant procedures that discussed the protection of areas containing safety-related equipment that may be affected by internal flooding. Specific plant attributes that were checked included structural integrity, sealing of penetrations, control of debris, and operability of sump pump systems. This inspection constitutes one sample.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On July 20, 2015 the inspectors observed and assessed an evaluated simulator scenario during continuing training on the control room simulator. The simulated scenarios included a failed reactor coolant pump seal, a dropped control element assembly (CEA), an ejected CEA that resulted in a small break loss of coolant accident (SBLOCA), and a manual reactor trip. The SBLOCA resulted in an 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 technical specifications (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 two evolutions:

- Unit 1, August 11, 2015 control room startup activities following an unplanned reactor trip
- Unit 2, September 7, 2015 control room Operations activities during planned down-power and a planned unit trip from 25 percent RTP to start the refueling outage

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

This inspection constitutes two inspection samples.

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed the performance data and associated action requests (ARs) for the two equipment issues 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. This inspection constitutes two samples. Documents reviewed are listed in the Attachment.

- AR 1969940, Unit 1 Instrument air compressor returned to MR (a)(2) by expert panel
- ARs 2040628, 2040630, and 2040632, Unit 2 Main feedwater valve operational issues

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 the emergent or planned maintenance activities listed below. 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 SSCs listed below. This inspection constitutes six samples. Documents reviewed are listed in the Attachment.

- Unit 1 OLRM assessment with one ultimate heat sink valve, 1C AFW pump, and ECCS emergency exhaust fan HVE-9A, OOS for planned maintenance activities
- Unit 1 OLRM assessment with 1A EDG OOS for emergent maintenance
- Unit 2 OLRM assessment with A-train of emergency core cooling OOS for testing
- Unit 1 OLRM assessment with the B high head safety injection pump OOS for testing
- Unit 2 Yellow Shutdown Safety Assessment (SSA) with the unit in Mode 5, with 2B EDG and 2B train of shutdown cooling OOS
- Unit 1 OLRM assessment (emergent Yellow) and Unit 2 SSA (emergent Orange) after the 1A and 2A start-up transformers developed a fault and became unavailable causing Unit 2 to lose one train of shutdown cooling

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

.1 Quarterly Review

a. Inspection Scope

The inspectors reviewed the interim dispositions and operability determinations or functionality assessments for the ARs listed below 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 verified the operability determinations or functionality assessments were performed in accordance with licensee procedure EN-AA-203-1001, "Operability Determinations and Functionality Assessments." The inspectors reviewed the applicable UFSAR sections, associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim dispositions. This inspection constitutes three samples.

- AR 2062887, Unit 2, 2A RPS TM/LP module F-2 output voltage out of specification
- AR 2063442, Unit 1 and 2, Containment Airlock Inner Equalizing Valves Testing Non-conformance
- AR 2063115, Unit 1, Unsecured cart with unrestrained fan found next to ECCS equipment

b. Findings

Introduction: The NRC identified a Green NCV of TS 6.8.1, "Procedures and Programs," for the licensee's failure to implement written procedures covering activities referenced in NRC Regulatory Guide 1.33, Revision 2, dated February 1978. Specifically, the licensee failed to follow procedural requirements to properly secure a pedestal fan positioned on a wheeled cart to the extent required to prevent a potential for adverse interaction with safety-related equipment during a design basis seismic event.

Description: On July 28, 2015, the inspectors identified an unsecured cart with an unrestrained operating five-foot pedestal fan mounted on top of it in the Unit 1 RAB. The cart-fan assembly was located within two feet of safety related equipment. The locking mechanism for the wheels were not locked. Additionally, the base of the pedestal fan was not positioned flat on the cart. One side of the fan base was partially supported on the 3-inch lip on the cart's edge making the fan more vulnerable to tilting over during a seismic event or being inadvertently bumped by plant personnel. The cart was positioned within two feet from ECCS equipment, specifically, safety related instrument valves and flow transmitters used to measure HPSI and LPSI flowrates during accident conditions. Upon notification, the licensee immediately removed the cart and fan from the area and initiated AR 2063115. Additionally, the licensee completed a walkdown of the Unit 1 and Unit 2 RABs to identify and remove any other unsecured temporarily placed equipment found near safety-related SSCs; no additional examples were identified. After the initial engineering review of this issue relating to potential damage to the ECCS instrumentation during a seismic event, the AR was upgraded to an apparent cause evaluation (ACE) and a past operability review (POR) was assigned.

The ACE identified the cause of this issue was that some station personnel lacked knowledge regarding the requirements for use of carts and securing of loads on carts that are temporarily located near safety-related SSCs. Corrective actions included revising the training module that addressed handling of equipment located near safety-related SSCs, sending out an electronic communication to plant personnel describing the requirements for control of temporary equipment located near safety-related SSCs, and posting signage throughout the plant describing requirements to secure/lock wheels on carts. The licensee estimated that the period in which the fan and cart assembly was located near the ECCS instrumentation was at least three days. It was determined based on the as-found conditions of the cart and fan-motor that during a design basis seismic event, the interaction between the fan-motor and the instrumentation could have caused two flow instruments to fail and leak. The licensee determined that the loss of the instrumentation and small amount of leakage would not impact the operability of the equipment and that the

ECCS trains would have remained operable but degraded. The inspectors interviewed the engineering personnel that completed the technical evaluation on the potential damage to the ECCS instruments during a seismic event and determined that the conclusions made were reasonable. The inspector's did not identify any issues with the licensee's POR determination.

Analysis: The licensee's failure to control equipment located near safety-related SSCs to prevent the equipment from interacting with safety-related SSCs during a design basis seismic event as required by procedures QI-13-PSL-2 and MA-AA-100-1008 was a performance deficiency. The performance deficiency was more than minor because the issue was associated with the Mitigating Systems Cornerstone attribute of Protection Against External Factors (seismic) and affected the cornerstone objective of ensuring the availability, reliability, and capability of safety-related SSCs to respond to initiating events to prevent undesirable consequences. Specifically, during a design basis seismic event the unsecured cart and unrestrained fan could have damaged the ECCS low and high pressure safety injection flowrate transmitters causing control room operators to have a loss of safety injection flowrate indication and a small amount of system leakage during accident mitigation.

Using NRC Inspection Manual Chapter 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," Table 2, dated June 19, 2012, the finding was determined to affect the Mitigating Systems Cornerstone. Manual Chapter 0609, Appendix A, "The 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 the inspectors answered "No" to all four screening questions. The finding involved the cross-cutting aspect in the area of human performance associated with training because the organization failed to provide training and ensure knowledge transfer to maintain a knowledgeable, technically competent workforce and instill nuclear safety values to ensure temporarily placed equipment located near safety-related SSCs was adequately secured to prevent interaction during a seismic event [H.9].

Enforcement: 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, that 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.

Procedure MA-AA-100-1008, "Station Housekeeping and Material Control," Revision 9, Section 4.10.1, "Seismic Housekeeping," requires, in part, that the use, location and deployment of temporary/portable equipment (such as wheeled tables, carts, hand trucks, etc.) shall be controlled to the extent required to prevent conditions which may create a potential for adverse interaction with safety-related equipment and components during a design basis seismic event; Section 4.10.4, requires, in part, that temporary portable equipment (such as wheeled tables, carts, hand trucks, etc.) shall be secured/located to preclude hazards to safety-related equipment and

components. Items taller than 4 feet in height shall be laterally restrained within the top 1/3 to prevent toppling, any exception requires an engineering evaluation; and Section 4.10.5 requires, in part, that wheeled equipment such as carts, hand trucks, etc. shall be immobilized to prevent uncontrolled contact with any installed safety-related, guarded, or sensitive equipment.

Quality Instruction QI-13-PSL-2, "Housekeeping and Cleanliness Control Methods," Revision 6, Section 5.15.1 requires, in part, that the licensee avoid any situation in which a stored item could fall or collapse during a seismic event and create an interaction with a safety-related item; ensure there is a separation of greater than 6" plus the height of the stored item between the safety-related item and the stored item; and ensure wheels on equipment or cabinets next to safety-related equipment are locked to prevent the equipment from becoming a missile in the event of a seismic event.

Contrary to the above, on July 28, 2015, in the Unit 1 RAB -0.5 foot level, an operating five-foot-high pedestal fan that was mounted on a cart did not have controls in place to prevent the cart and fan from having interaction with safety-related equipment during a design basis seismic event. Specifically, the fan was not restrained to prevent it from falling onto ECCS instrumentation equipment during a design basis event, there was no engineering evaluation to account for the separation between the fan and the safety-related equipment being less than the height of the fan (including the height of the cart) plus the required 6", and the cart wheels were not locked to prevent the equipment from becoming a missile in the event of a seismic event. Immediate corrective actions included removing the fan and cart from the area and completing a past operability review. Because the licensee has restored compliance and entered this issue into its CAP as AR 2063115, and because the finding is of very low safety significance (Green), this violation is being treated as a NCV, consistent with Section 2.3.2 of the NRC's Enforcement Policy: (NCV 05000335/2015003-01, "Unsecured Utility Cart With An Unrestrained Operating Pedestal Fan Near Safety-related ECCS Equipment").

.2 Annual Review: Operator Workarounds

a. Inspection Scope

The inspectors reviewed the licensee's implementation of the process used to identify, document, track, and resolve operator workarounds (OWAs) as described in procedure OP-AA-108-1000, "Operator Challenge Program Management," to verify the licensee was identifying workarounds at an appropriate threshold and entering them into the CAP. Daily plant and equipment status logs, and degraded instrument logs were reviewed to identify any potential sources of unidentified OWAs. During the review, the inspectors determined that there were no operator workarounds in effect for either unit. This inspection constitutes one sample.

b. Findings and Observations

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the 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. This inspection constitutes five samples.

- WO 40339165, 2A coolant charging pump maintenance on pulsation dampeners
- WO 40386103, Replace torque switch for 1B AFW injection valve MV-09-10
- WO 40404568, 1A EDG: troubleshoot/replace jacket water temperature switch
- WO 40403639, Unit 1 ACC-3C control room air conditioning unit, replace the thermostatic expansion valve
- WO 40073086, Unit 2 repair actuator for flow control valve FCV-25-36 on penetration 56

b. Findings

No findings were identified.

1R20 Refueling and Other Outage ActivitiesUnit 2 Refueling Outage SL2-22a. Inspection ScopeOutage Planning, Control and Risk Assessment

The Unit 2 planned refueling outage started on September 8, 2015. The inspectors reviewed the licensee's outage risk control plan and verified that the licensee had appropriately considered risk, industry experience, and previous site specific problems. The inspectors also reviewed the outage work schedule for Operations, Maintenance, and the Fire Brigade to confirm the licensee had scheduled covered workers such that the minimum days off for individuals working on outage activities was in compliance with 10 CFR 26.205(d)(4) and (5).

The inspectors reviewed the risk reduction methodology employed by the licensee during various daily refueling outage (RFO) SL2-22 meetings including the outage command center (OCC) morning meetings, operations team meetings, and schedule performance update meetings. The inspectors examined the licensee implementation of shutdown safety assessments during SL2-22 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. Documents reviewed are listed in the Attachment.

Monitoring of Shutdown Activities

The inspectors monitored reactor coolant system (RCS) cooldown rates to verify they met TS requirements. The inspectors walked down the RCB shortly after the unit was shutdown to determine whether any components were impacted by previously unidentified RCS leakage. The RCB, including the RCB sump, was inspected for any damage incurred during the operating cycle.

Outage Activities

The inspectors examined outage activities to verify that they were conducted in accordance with TSs, 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 worker fatigue was properly managed

Refueling Activities and Containment Closure

The inspectors witnessed selected fuel handling operations being performed according to TSs and applicable operating procedures from the main control room, and refueling cavity inside containment. The inspectors also examined licensee activities to control and track the position of each fuel assembly. 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."

Mode Transition

The inspectors examined selected TSs, license conditions, license commitments, and verified administrative prerequisites were being met prior to mode changes.

Lowered Inventory Condition

The inspectors reviewed the planned activities associated with a period of lowered RCS inventory established in order to remove the reactor vessel head. The inspectors verified the licensee had controls in place to govern lowered inventory

conditions. The inspectors verified that the necessary instrumentation and means of adding inventory to the RCS were available.

Corrective Action Program

The inspectors reviewed ARs generated during SL2-22 to evaluate the licensee's threshold for initiating ARs. The inspectors routinely reviewed the results of Quality Assurance (QA) daily surveillances of outage activities.

This inspection constitutes a partial sample. Additional RFO inspection activities will be documented in the next quarterly report.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following 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. This inspection constitutes five samples. Documents reviewed are listed in the Attachment.

In-Service Tests:

- 2-OSP-07.02A, 2A Containment Spray Pump Safeguards Full Flow Test, and 2-OSP-07.02B, 2B Containment Spray Pump Safeguards Full Flow Test

Surveillance Tests:

- 0-OSP-37.01, Emergency Cooling Water Canal – Periodic Test
- 1-OSP-66.01, Control Element Quarterly Exercise
- 2-GOP-305, Reactor Plant Cooldown – Hot Standby to Cold Shutdown (18-month surveillance of the 1A and 1B Boric Acid pumps)

Containment Isolation Valve Surveillance:

- 2-OSP-68.02, Local Leak Rate Test (Penetrations 23 and 24, CCW to RCPs)

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

Emergency Preparedness Drills

a. Inspection Scope

On August 26, 2015, the inspectors observed the simulator control room, technical support center, and emergency operating 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 drill scenario included a unit manual trip due to complications with feedwater, followed by a loss of off-site power. During the transient, the unit lost all feedwater flow to the steam generators, requiring implementation of once-through cooling. Consequently, the licensee declared a Site Area Emergency. Subsequently, plant conditions degraded to a point where the licensee declared a General 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 that the, Alert, Site Area Emergency, and General Emergency classifications and notifications were made 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. The inspectors attended the licensee drill critique and verified the identified critique items and drill weaknesses were captured in the licensee's CAP. This inspection constitutes one sample.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

Mitigating Systems

a. Inspection Scope

The inspectors reviewed licensee submittals for the performance indicators (PIs) listed below for the period June 30, 2014 through June 30, 2015, 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 identified the required data, as applicable. The inspectors interviewed licensee personnel associated with performance indicator data collection, evaluation, and distribution.

- Unit 1 Safety System Functional Failures
- Unit 2 Safety System Functional Failures

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, RCS unidentified leakage was checked on a daily basis to verify no substantive or unexplained changes.

b. Findings

No findings were identified.

.2 Annual Sample Review – Review of 10 CFR 50.59 Screens for Installation of Electrical Jumpers to Support Post-Loss of Coolant Accident Hot Leg Injection

a. Inspection Scope

The inspectors selected the licensee's 10 CFR 50.59 Applicability Determination/Screening (ARs 1690764 and 1692695) for procedures 1-GME-100.03 and 1-GME-100.03A for additional review. The procedures were issued to provide instructions for the installation of electrical jumpers if there was a loss of power to certain valves used to establish hot leg injection. Hot leg injection is required within 6 hours after a loss of coolant accident. The licensee in both cases determined that a full 10 CFR 50.59 evaluation of the procedure changes was not needed and therefore, an NRC review was not required. The inspectors independently reviewed the 10 CFR 50.59 screenings, the associated FSAR change, the emergency operating procedure 1-EOP-99, "Appendices/Figures/Tables /Datasheets," that directs the installation of the electrical jumpers, licensee procedure EN-AA-203-1202, "10 CFR 50.59 Evaluation," and Nuclear Energy Institute (NEI) 91-07, "Guidelines for 10 CFR 50.59 Evaluations," to determine whether a full evaluation was required.

b. Observations and Findings

The inspectors determined that the licensee improperly answered screening Question 3 contained in the licensee's 10 CFR 50.59 Applicability Determination/Screening sheets for both procedures 1-GME-100.03 and 1-GME-100.03A. Question 3, "Does the proposed activity involve a change to the procedure that adversely affects how UFSAR described SSC design functions are performed or control," was answered "No" since the design functions of the affected valves are not changed. The inspectors determined that the licensee did not address whether the change adversely affected "how" the design functions were performed or controlled. In addition, NEI 91-07 states that changes that fundamentally alter the existing means of performing or controlling design functions should be conservatively treated as adverse and screened in. It also lists replacing automatic actions with manual actions as an example of changes that should be screened in. The licensee placed this issue into the corrective action program as AR 2063184. The licensee completed full 10 CFR 50.59 evaluations for procedures 1-GME-100.03, 1-GME-100.03A, and 1-EOP-99, and FSAR Appendix 6C, subsection 2.5, and determined that a license amendment was not required.

The inspectors determined that the licensee's failure to perform full written 10 CFR 50.59 evaluations associated with procedures and UFSAR changes that were made to formalize the use of manual actions for certain Unit 1 hot leg injection failure scenarios was a minor violation of 10 CFR 50.59(d)(1). 10 CFR 50.59(d)(1) requires a written evaluation which provides the basis that the change, test or experiment did not require a license amendment. The licensee concluded that if a full 10 CFR 50.59 evaluation of the test had been performed, prior NRC review and approval would not have been required prior to implementing the changes. The NRC Enforcement Manual, Section 2.1.3., "Enforcement of 10 CFR 50.59 and Related FSAR," subsection E.6.b., states, "Violations will be considered minor if there was not a reasonable likelihood that the change requiring 10 CFR 50.59 evaluation would ever require Commission review and approval prior to implementation." The licensee documented the issue in their corrective action program as AR 02063184.

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

.1 Unit 1 Reactor Automatically Tripped During Reactor Protection System (RPS) Logic Matrix Testing

a. Inspection Scope

On August 9, 2015, Unit 1 was operating at approximately 100 percent RTP when the unit automatically tripped during RPS logic matrix testing.

The inspectors were notified of the reactor trip and responded to the control room to assess plant conditions and determine if any complications occurred during the trip and reactor plant shutdown. The inspectors reviewed control room chronological logs, control room indications, post-trip procedures, and interviewed control room operators to verify that operating restrictions and procedural requirements were met. The inspectors reviewed documentation of operator actions associated with licensee emergency operating procedures 2-EOP-01, "Standard Post Trip Actions," and 2-EOP-02, "Reactor Trip Recovery." The inspectors reviewed the circumstances

associated with the trip as documented in AR 2065821 to determine the cause of the reactor trip and to ensure all performance and equipment deficiencies were addressed prior to restarting the unit. The unit was restarted on August 11, 2015, and reached 100 percent RTP on August 12, 2015.

b. Findings

No findings were identified. Although there were no findings associated with the response to the unit trip, the regulatory significance of the cause of the trip is documented in section 4OA3.3 of this report.

.2 Partial Loss of Off-Site Power to Both Units

a. Inspection Scope

On September 17, 2015, a fault was experienced on the 2A 6.9kV non-segregated bus that resulted in a loss of power to both the 1A and 2A startup transformers (SUTs). The loss of the 1A SUT had no effect on Unit 1 equipment since the A train non-safety and safety related electrical switchgear remained powered by the auxiliary transformer as is the normal configuration with an operating unit. Unit 2 was shutdown in Mode 5 (<200°F) with the RCS vented to atmosphere through the removed pressurizer manway. The 2A EDG was removed from service for planned maintenance. The loss of the 2A SUT resulted in a loss of power to the A train of shutdown cooling.

The inspectors responded to the Unit 2 control room to assess plant conditions and the status of the operating train of shutdown cooling. The inspectors reviewed control room chronological logs, control room indications, and interviewed control room operators to verify that operating restrictions and procedural requirements were met. The inspectors reviewed documentation of operator actions associated with licensee abnormal operating procedures 2-AOP-47.01A, "Loss of Safety Related AC Bus-Train A," 2-AOP-03.02, "Shutdown Cooling Abnormal Operation," and 2-AOP-14.01, "Component Cooling Water Abnormal Operation." The inspectors reviewed the circumstances associated with the partial loss of offsite power as documented in AR 2074774 to determine the cause of the loss of offsite power. In addition, the inspectors reviewed the event to determine whether it was reportable under 10 CFR 50.72 and 50.73. To provide defense in depth for core cooling, the licensee reinstalled the pressurizer manway and verified that AFW was available to fill the steam generators. These actions provided a backup means, if necessary, of removing decay heat via the steam generators in the event the second train of shutdown cooling was lost for any reason. The faulted 2A 6.9kV bus was isolated from the 2A SUT and both SUTs were re-energized on September 18, 2015.

b. Findings

.1 (Opened) Unresolved Item (URI) 05000335, 389/2015003-02, Partial Loss of Unit 1 and Unit 2 Offsite Power Due to Unit 2 6.9 kV Non-Segregated Bus Fault

Introduction: The inspectors identified an unresolved item associated with the partial loss of offsite power as a result of a fault on the 2A1 6.9 kV non-safety bus.

Description: On September 17, 2015, a fault of the 2A1 6.9 kV bus connected to the 2A SUT resulted in the loss of power to both the 1A and 2A SUTs. 1A SUT was impacted since it shared a common power supply from the switchyard with the 2A SUT. The 2A1 6.9kV bus is of a bus bar design. The bus is made up of flat copper bars that are bolted together with all three phases contained in a metal enclosure. The phases are supported within the enclosure and insulated from each other using ceramic insulator plates that maintain the spacing between the phases and with the enclosure. Each bar is insulated between the bolted connections with Noryl insulation. Rubber insulating boots cover the bolted connections. The licensee's inspection of the 6.9 kV bus determined that the fault occurred at a location where the bus transitions from a vertical to a horizontal orientation. The three insulating boots for this bolted transition were found lying on top of the ceramic insulators between the phases below in the vertical run. The boots had a coating of dust and corrosion products that had flaked off the enclosure. At the close of this inspection period, the licensee's root cause evaluation and complete inspection of the 2A1 6.9 kV bus was in progress. The licensee entered this issue in the CAP as AR 2074774. This is an unresolved item pending review of the licensee's root cause evaluation to determine whether or not a performance deficiency exists. The NRC will track this issue as an URI: (URI 05000335,389/2015003-02, "Partial Loss of Unit 1 and Unit 2 Offsite Power Due to Unit 2 6.9 kV Non-Segregated Bus Fault")

.2 NCV 05000389/2015003-03, Untimely 10 CFR 50.72 Notification

Introduction: The NRC identified a Severity Level IV, NCV of 10 CFR 50.72(b)(3)(iv)(A) for the licensee's failure to notify the NRC within 8 hours of an event that was not part of a pre-planned sequence which resulted in a valid actuation of an emergency AC electrical power system.

Description: On September 17, 2015, St. Lucie Unit 2 was in Mode 5 with the RCS vented to the atmosphere through the removed pressurizer manway. The 2A EDG was not available and had been removed from service for planned maintenance. Off-site power was provided through both the 2A and 2B SUTs. The 2A and 2B LPSI trains were aligned for shutdown cooling to remove decay heat. At 1222 hours, the non-segregated bus from the 2A SUT to the 6.9kV non-safety related bus 2A1 experienced a fault which resulted in the 1A and 2A SUTs' supply breakers opening and the loss of one source of off-site power to each unit. As a result, the 4.16kV engineering safeguards bus (2A3) was de-energized. The bus's emergency power supply, the 2A EDG, did not start to repower the bus since it was tagged out for maintenance.

The licensee initially screened this event as not reportable on the basis that the valid actuation signal was intentionally defeated by properly removing the 2A EDG from service, and thus a valid actuation of the system was not applicable. Following the guidance in NUREG-1022, Rev. 3, "Event Report Guidelines 10 CFR 50.72 and 50.73," the inspectors concluded that the event resulted in a valid actuation signal due to the 2A3 bus de-energization. A valid actuation signal constitutes a valid system actuation reportable pursuant to 10 CFR 50.72(b)(3)(iv)(A). After discussion of this issue with the inspectors, the licensee determined the event was reportable and at 1634 hours on September 24, 2015, the licensee notified the NRC pursuant to 10 CFR 50.72(b)(3)(iv)(A).

Analysis: The licensee's failure to notify the NRC within 8 hours of the valid actuation of the 2A EDG that occurred on September 17, 2015, as required by 10 CFR 50.72(b)(3), was a performance deficiency. The NRC evaluated this issue under the traditional enforcement process because the failure to report the event could impact the NRC's ability to perform its regulatory function. The issue was more than minor because it was similar to a Severity Level IV example provided in Section 6.9, "Inaccurate and Incomplete Information or Failure to Make a Required Report," of the NRC Enforcement Policy. Specifically, Section 6.9(d)(9) of the Enforcement Policy states, in part, SL IV violations involve, for example: a licensee fails to make a report required by 10 CFR 50.72. In accordance with IMC 0612, "Power Reactor Inspection Reports," issued January 24, 2013, there are no cross-cutting aspects assigned to traditional enforcement violations.

Enforcement: As required by 10 CFR 50.72(b)(3)(iv)(A), the licensee shall notify the NRC of any event or condition which results in a valid actuation of the any of the systems described therein within eight hours of the occurrence of the event, except when the actuation results from and is part of a pre-planned sequence during testing or reactor operation. Contrary to the above, on September 17, 2015, the licensee failed to recognize that the event described herein met the reporting requirements of 10 CFR 50.72(b)(3)(iv)(A) and did not report the event until September 24, 2015. The NRC is not considering enforcement discretion because the violation resulted from matters reasonably within the licensee's ability to foresee and correct, and therefore should have been prevented. However, because the licensee entered this violation into its corrective action program as AR2075703, restored compliance within a reasonable period of time after the violation was identified, and because the violation was not repetitive or willful, the violation is being treated as a Severity Level IV NCV consistent with Section 2.3.2 of the Enforcement Policy: (NCV 05000389/2015003-03, "Untimely 10 CFR 50.72 Notification")

.3 (Closed) Licensee Event Report 05000335/2015-001-00, Reactor Trip While Performing Reactor Protection System Logic Matrix Test

a. Inspection Scope

On August 9, 2015, Unit 1 was operating at approximately 100 percent RTP when the unit automatically tripped during RPS logic matrix testing. The licensee's root cause evaluation determined that the individuals performing the test failed to follow 1-OSP-63.01, "RPS Logic Matrix Test", resulting in a loss of configuration control. The operators failed to reclose two trip circuit breakers (TCBs) that were opened in the previous section of the procedure prior to moving on to the next section that opened a second pair of TCBs. Opening the second pair of TCBs resulted in a reactor trip. The inspectors reviewed the licensee event report (LER) and the associated root cause evaluation (AR 2065821) to verify the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors also reviewed the LER to identify any licensee performance deficiencies associated with the event.

b. Findings

Introduction: A Green, self-revealing, NCV of TS 6.8.1 was identified for the licensee's failure to adequately implement surveillance procedures during RPS testing. Specifically, the licensee failed to implement as-written operations surveillance procedure 1-OSP-63.01, "RPS Logic Matrix Test," when operators failed to close two reactor trip breakers (RTBs) prior to proceeding to the next section of the procedure. This resulted in an unplanned automatic reactor trip when a second pair of trip circuit breakers was opened.

Description: On August 9, 2015, while Unit 1 was operating at full power, the control room crew commenced performing the monthly surveillance test of the reactor protection system utilizing procedure 1-OSP-63.01. The shift technical advisor (STA) was reading and place keeping procedure steps and the desk reactor control operator (DRCO) was performing the required switch manipulations. The pair successfully completed several sections of the procedure that resulted in repetitive opening and closing of pairs of TCBs. Prior to performing 1-OSP-63.01 step 4.6.3.JJ that would have closed TCBs 4 and 8, the board reactor control operator (BRCO) requested the DRCO relieve him at the controls so that he could take a restroom break and to finish taking hourly logs that were required to be taken behind the control board. The BRCO turned over with the DRCO. At this point, TCBs 4 and 8 had not been closed. The STA then incorrectly checked off the section as complete. The BRCO, after turning over with the DRCO, recommenced the test with the STA at Step 4.7. When they performed step 4.7.3.E, TCBs 1 and 5 opened as expected. Opening the two additional TCBs resulted in a reactor trip.

Corrective actions completed for this event included a human performance review that was conducted by the shift manager, operations director and plant general manager, initially implementing around the clock management oversight, and revising the RPS matrix test procedure to change it from a reader/doer procedure to a procedure with more concurrent verification steps. The licensee entered this issue into their corrective action program as AR 2065821.

Analysis: The licensee's failure to follow procedure 1-OSP-63.01 as-written was a performance deficiency. This performance deficiency was more than minor because it was associated with the human performance attribute of the Initiating Events Cornerstone and it adversely affected the associated cornerstone objective of limiting the likelihood of events that upset plant stability and challenge critical safety functions and resulted in an actual plant trip. The inspectors evaluated the risk of this finding using IMC 0609, "Significance Determination Process," Attachment 4, "Initial Characterization of Findings," and IMC 0609, Appendix A, "The Significance Determination Process for Findings At-Power." The inspectors determined that the finding was of very low safety significance because it did not result in both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available.

The finding involved the cross-cutting area of human performance, with an aspect of avoiding complacency (H.12), in that, the licensee failed to ensure that personnel effectively used human performance tools during the logic matrix test to ensure procedure steps were completed as required.

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. Operations Surveillance Procedure 1-OSP-63.01, "RPS Logic Matrix Test", Revision 10, Step 4.6.3.JJ, directed the closure of TCBs 4 and 8. Contrary to the above, the operators failed to close these TCBs prior to opening TCBs 1 and 5 in the next section of the procedure. This condition resulted in a reactor trip. Because the licensee entered the issue into their corrective action program as AR 2065821 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 05000335/2015003-04, "Failure to Follow Reactor Protection System Surveillance Procedure Resulting in Reactor Plant Trip")

.4 (Closed) LER 05000389/2015-001-00, "Unit 2 Shutdown Due to Through Wall Crack and Leak in the 2B2 Safety Injection Tank Discharge Pipe"

a. Inspection Scope

The LER documented that the SIT was inoperable for a period of time that was greater than that which was allowed by TS. The licensee determined that the total out of service time for the 2B2 SIT was approximately 13 days which exceeded the TS allowed outage time and hot shutdown completion time of 36 hours.

The inspectors reviewed the LER and the associated corrective action document (AR 2039830) to verify the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors also reviewed the LER and AR to identify any licensee performance deficiencies associated with the issue.

b. Findings

On March 30, 2015 the operators reviewed the Unit 2 control room logs and identified increased leakage from the 2B2 SIT. On April 11, 2015, the 2B2 SIT was declared inoperable due to a through wall leak identified on the 12-inch diameter Class 2 piping of the discharge header. The licensee determined that the pipe failed due to a legacy support design from construction, which led to higher levels of stress in the support's weld. The licensee concluded through metallurgical analysis that the pipe flaw propagated through wall due to high cycle fatigue. Prior to the through-wall leak being identified, there were no indications that a flaw existed within the pipe support weld. Additionally, there were no examinations required to be performed on the support that would have recognized a flaw within the support weld. As a result, the inspectors concluded that there was no performance deficiency associated with the pipe failure. The inspectors utilized available risk-informed tools to assess the safety significance of the 2B2 SIT inoperability. Based on the fact that the through-wall leak did not preclude the 2B2 SIT from performing its design basis function while inoperable, the inspectors concluded this event was of very low safety significance.

St. Lucie Unit 2 TS limiting condition for operation 3.5.1, "Safety Injection Tanks (SIT)," requires each RCS safety injection tank to be operable in plant operating Mode 1 through Mode 3. With one SIT inoperable, the inoperable SIT must be

returned to operable status within 24 hours or Unit 2 placed in hot standby within the next six hours and hot shutdown within the following six hours. Contrary to the above, Unit 2 operated for approximately 13 days from March 30, 2015 to April 12, 2015, with the 2B2 SIT inoperable due to a through-wall leak identified on the 12-inch diameter class 2 piping of the discharge header. Although a violation of the TS occurred, the violation was not attributable to an equipment failure that was avoidable by reasonable licensee quality assurance measures or management controls. Therefore, the TS 3.5.1 violation was not associated with a licensee performance deficiency. The inspectors concluded that the violation would normally be characterized as a Severity Level IV violation based on its very low safety significance. The NRC exercised enforcement discretion in Enforcement Action (EA)-14-047, in accordance with Section 2.2.4.d and 3.5 of the Enforcement Policy because the violation was not associated with a licensee performance deficiency; therefore, it will not be considered in the assessment process or the NRC's Action Matrix. This issue was documented in the licensee's corrective action program as AR 2039830. Licensee corrective actions included: replacing the leaking pipe spool piece with the through wall flaw (line I-12"-SI-459), modifying the supports for line SI-459, removing support SI-4203-44, revising procedure STD-C-010, "Piping and Support Analysis Requirements St. Lucie Units 1 and 2," to include more detail related to weld attachments to specifically address avoiding extended lugs which develop a bending movement, and incorporating considerations associated with using weld attachments in an environment which involves cyclic loading. This LER is closed.

4OA5 Other Activities

Independent Spent Fuel Storage Installation Walk down (IP 60855.1)

a. Inspection Scope

The inspectors conducted a walk down of the Independent Spent Fuel Storage Installation (ISFSI) controlled access fenced-in cask area per Inspection Procedure 60855.1, "Operation of an ISFSI at Operating Plants." The inspectors observed each cask building temperature indicator and passive ventilation system to be free of any obstruction allowing natural draft convection decay heat removal through the air inlet and air outlet openings. The inspectors observed associated cask building structures to be structurally intact and radiation protection access controls to the ISFSI area to be functional. The inspectors verified that the ISFSI was inspected on a shiftly basis by operations personnel and a physical inventory has been conducted on all spent fuel stored in the ISFSI at least every 12 months. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Costanzo and other members of licensee management on October 13, 2015. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary information. The licensee did not identify any proprietary information.

ATTACHMENT: SUPPLEMENTARY INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:

M. Baughman, Training Manager
B. Coffey, Plant General Manager
C. Costanzo, Site Vice President
K. Frehafer, Licensing Engineer
M. Haskin, Projects Site Manager
M. Jones, Engineering Director
E. Katzman, Licensing Manager
C. Martin, Health Physics Manager
R. McDaniel, Fire Protection Supervisor
D. Pitts, Maintenance Director
P. Rasmus, Operations Director
R. Sciscente, Licensing Engineer
M. Snyder, Nuclear Quality Assurance Manager
C. Spenser, Chemistry Manager
C. Workman, Security Manager

NRC personnel:

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

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

50000335, 389/2015003-02 URI Partial Loss of Unit 1 and Unit 2 Offsite Power Due to Unit 2 6.9 kV Non-Segregated Bus Fault (Section 4OA3.2)

Opened and Closed

50000335/2015003-01 NCV Unsecured Utility Cart With An Unrestrained Operating Pedestal Fan Near Safety-related ECCS Equipment (Section 1R15)

05000389/2015003-03 SL IV Untimely 10 CFR50.72 Notification (Section 4OA3.2)

05000335/2015003-04 NCV Failure to Follow Reactor Protection System Surveillance Procedure Resulting in Reactor Plant Trip (Section 4OA3.3)

Closed

05000335/2015-001-00 LER Reactor Trip While Performing Reactor Protection System Logic Matrix Test (Section 4OA3.3)

05000389/2015-001-00 LER Unit 2 Shutdown Due to Through Wall Crack and Leak in the 2B2 Safety Injection Tank Discharge Pipe (Section 4OA3.4)

LIST OF DOCUMENTS REVIEWED

Section 1R01 Adverse Weather Protection

ADM-04.01, Hurricane Season Preparation

AP 0006128, Hurricane Staffing

EPIP-00, Discovery & Identification of an Emergency Condition (Including Chemical, Fire and Natural Emergencies)

EPIP-01, Classification of Emergencies

EPIP-02, Duties and Responsibilities of The Emergency Coordinator

Section 1R04 Equipment Alignment

1-NOP-59.01B, 1B Emergency Diesel Generator Standby Alignment

1-NOP-59.01A, 1A Emergency Diesel Generator Standby Alignment

1-NOP-03.11, High Pressure Safety Injection System Initial Alignment

1-NOP-03.21, Low Pressure Safety Injection System Initial Alignment

1-NOP-07.41, Containment Spray System Initial Alignment

1-NOP-07.11, Refueling Water Tank Initial Alignment

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

Section 1R06 Flood Protection Measures

8770-G-408, Yard Duct Runs and Lighting Plan, Sections and Details

8770-G-388, Diesel Generator Building Conduit, Grounding & Lighting

WO 40175953 B Safeguards Room Sump Level Alarm and Pump Control Switches

1-AOP-24.01, RAB Flooding

1-ARP-01-R00, Control Room Panel R RTGB-106

Section 1R11 Licensed Operator Requalification Program and Licensed Operator Performance

1-NOP-99.07, Operations Hard Cards, Attachment 1, CEDS Operations

1-GOP-302, Reactor Plant Startup– MODE 3 TO MODE 2

2-EOP-01, Standard Post Trip Actions

2-EOP-02, Reactor Trip Recovery

2-EOP-03, Loss of Coolant Accident

2-EOP-10, Station Blackout

2-AOP-01.09A1, 2A1 Reactor Coolant Pump

2-AOP-66.01, Dropped or Misaligned CEA Abnormal Operations

EPIP-01, Classification of Emergencies

EPIP-02, Duties and Responsibilities of the Emergency Coordinator.

2-GOP-305, Reactor Plant Cool Down – Hot Standby to Cold Shutdown

2-NOP-03.05, Shutdown Cooling

2-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

Section 1R13 Maintenance Risk Assessments and Emergent Work Control

OP-AA-104-1007, Online Aggregate Risk
WCG-016, Online Work Management
ADM-09.23, Outage Risk Assessment and Control

Section 1R15 Operability Determinations and Functionality Assessments

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

Section 1R20 Refueling and Other Outage Activities

2-GOP-123, Turbine Shutdown – Full Load to Zero Load
2-GOP-305, Reactor Plant Cooldown – Hot Standby to Cold Shutdown
2-GOP-302, Reactor Plant Startup – MODE 3 TO MODE 2
2-EOP-01, Standard Post Trip Actions
2-EOP-02, Reactor Trip Recovery
OP-AA-102-1003, Guarded Equipment
ADM-09.23, Outage Risk Assessment and Control
0-NOP-67.05, Refueling Operation
2-NOP-67.04, Refueling Operation

Section 1R22 Surveillance Testing

ADM-29.02, ASME Code Testing of Pumps and Valves

Section 4OA5: Other Activities

0010439 Physical Inventory of Nuclear Fuel Storage Areas (completed March 31, 2015)
Associate Nuclear Plant Operator (ANPO) Operator Rounds Database (ISFSI)
0010728, Unit Restart Readiness
003119, Post Trip Review (Unit 1 August 9, 2015 trip)