



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

April 25, 2013

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 NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2013002, 05000389/2013002 AND EMERGENCY PREPAREDNESS
REPORT 05000335/2013501, 05000389/2013501**

Dear Mr. Nazar:

On March 31, 2013, the US Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Nuclear Power Plant Units 1 and 2. The enclosed integrated inspection report documents the inspection results, which were discussed on April 8, 2013, with Mr. Jensen and other members of your staff.

The inspection examined activities conducted under your license as they related to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Two NRC identified findings of very low safety significance (Green) were identified during this inspection. These two findings were determined to involve violations of NRC requirements and are being treated as non-cited violations (NCVs), consistent with Section 2.3.2 of the Enforcement Policy.

If you contest the violations or significance of these NCVs, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the 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 Nuclear 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 Nuclear Power Plant.

M. Nazar

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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).

Sincerely,

/RA/

Daniel Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

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

Enclosures: Inspection Reports 05000335/2013002, 05000389/2013002, and
05000335/2013501, 05000389/2013501
w/Attachment: Supplemental Information

cc w/encls: (See page 3)

M. Nazar

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M. Nazar

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Letter to Mano Nazar from Daniel Rich dated April 25, 2013.

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05000335/2013 AND 05000389/2013 AND EMERGENCY PREPAREDNESS
REPORT 05000335/2013501, 05000389/2013501

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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: 05000335/2013002, 05000389/2013002 and 05000335/2013501,
05000389/2013501

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

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6501 South Ocean Drive
Jensen Beach, FL 34957

Dates: January 1 to March 31, 2013

Inspectors: T. Morrissey, Senior Resident Inspector
R. Reyes, Resident Inspector
S. Sandal, Senior Project Engineer (Sections 4OA2.2 and 4OA3.1)
T. Hoeg, Senior Resident Inspector, Turkey Point (Section 4OA5.3)
M. Speck, Senior Emergency Preparedness Inspector (Sections 1EP2,
1EP3, 1EP5, and 4OA1.2)
W. Loo, Senior Health Physicist (Sections 1EP2, 1EP3, 1EP5, and
4OA1.2)

Approved by: Daniel Rich, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000335/2013002, 05000389/2013002 and IR 05000335/2013501, 05000389/2013501; 01/01/2013 – 03/31/2013; St. Lucie Nuclear Plant, Units 1 & 2; Problem Identification and Resolution; Follow-up of Events and Notices of Enforcement Discretion.

The report covered a three month period of inspection by resident inspectors. Additionally, the report documents inspections completed by regional inspectors in the area of emergency preparedness and problem identification and resolution. Two Green non-cited violations were identified. The significance of inspection findings were identified by their color i.e. (Green, White, Yellow, or Red) and determined using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP) dated June 2, 2011. The cross-cutting aspect was determined using IMC 0310, Components Within the Cross-Cutting Areas" dated October 28, 2011. All violations of NRC requirements were dispositioned in accordance with the NRC's Enforcement Policy dated January 28, 2013. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4.

Cornerstone: Mitigating Systems

Green. An NRC identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified for the licensee's failure to ensure that all below grade Unit 1 and 2 reactor auxiliary building (RAB) penetrations were adequately sealed as required by the licensee's design basis. The missing and degraded penetration seals were found during licensee inspections performed in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340)." Corrective actions completed included restoring the degraded or missing seals to design basis requirements.

The performance deficiency was determined to be more than minor because it affected the protection against external factors attribute of the mitigating system cornerstone, and affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Using Manual Chapter 0609.04, Initial Characterization of Findings, Table 2, dated June 19, 2012, the finding was determined to affect an external event mitigation system and affected the mitigating system cornerstone. Although the finding existed with the units at power and during shutdown conditions since original plant construction, the risk was assessed using Manual Chapter 0609 Appendix G, Attachment 1 Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWR's and BWR's dated May 25, 2004 using Checklists 1 through 4. Appendix G was utilized since both units would have been shutdown prior to the probable maximum hurricane (PMH) event and associated external flood. Due to the accuracy of weather forecasting, there would be several days for the licensee to prepare for a PMH. The inspectors reviewed the finding with the regional senior reactor analyst and determined that the licensee would have adequate time to ensure that the mitigating

Enclosure

capability of core heat removal, inventory control, emergency AC power, containment control, or reactivity control systems would have been available prior to the PMH affecting the site. The finding screened as Green because none of the attributes in the checklists were adversely impacted. No cross cutting aspects were assigned to the finding. The finding does not represent current licensee performance because the degraded and missing penetration seals have existed since original construction of the plant. (Section 4OA3.2)

Green. An NRC identified non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified for the failure to promptly identify and correct a condition adverse to quality (CAQ) involving alignment of the safety-related refueling water tank (RWT) to a non-seismic spent fuel pool (SFP) purification system. Corrective actions included implementing administrative actions to preclude this alignment when the RWT is required to be operable.

The finding was more than minor because it affected the configuration control attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the alignment of the safety-related RWT to the non-seismic SFP purification system created a CAQ and rendered the RWT inoperable for greater than its allowed outage time. The inspectors evaluated the finding in accordance with NRC Inspection Manual Chapter 0609, "Significant Determination Process," Attachment 4 and Appendix A and determined that the finding required a phase 3 evaluation by a senior reactor analyst. The analyst calculated the change in conditional core damage probability (Δ CCDP) due to the postulated loss of the RWT during an event, multiplied by the frequency of a seismic event that could require the use of the RWT (e.g., loss of coolant accident) and applied an exposure time factor (4 days/7 days). The dominant sequence was a steam generator tube rupture which proceeds to core damage due to a lack of high or low pressure injection water supply. The risk was mitigated by the low probability of a seismic event. The analysis determined that the risk increase of the performance deficiency was an increase in large early release frequency less than $1E-7$ /year which is a GREEN finding of very low safety significance. The cause of the finding involved the cross-cutting area of problem identification and resolution, the component of corrective action program, and the aspect of complete and thorough evaluation, P.1(c); because the licensee failed to properly evaluate for operability the practice of aligning a seismically qualified RWT to a non-seismic purification system. (Section 4OA2.3)

REPORT DETAILS

Summary of Plant Status

Unit 1:

The unit began the inspection period at 100 percent rated thermal power (RTP). On March 12, the unit automatically tripped from 100 percent RTP as a result of the closure of the B main steam isolation valve (MSIV), HCV-08-1B, due to a separation of the disc from the valve stem. The A train MSIV, HCV-08-1A, was also inspected and determined to be in need of repair. Both valves were repaired and the unit was restarted on March 31. The unit was at approximately 8 percent RTP at the end of the inspection period.

Unit 2:

The unit began the inspection period at 100 percent RTP and remained there throughout the inspection period.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

Impending Adverse Weather Conditions

a. Inspection Scope

On March 4 and 5, the inspectors reviewed the licensee's overall preparations and actions for an overnight weather forecast of below 50-degree temperatures, as described in operating procedure 0-NOP-99.06, Cold Weather Preparations. The inspectors verified conditions were established for the onset of the low temperatures including the placement of temporary heaters around equipment affected by low temperatures. The inspectors reviewed compensatory measures planned and implemented for the forecasted low temperatures while considering equipment controls, area accessibility, and system susceptibilities to cold weather. Documents reviewed are listed in the Attachment. The inspectors performed a walkdown of the following areas:

- Unit 1 and 2; A and B main feed pump areas
- Unit 2, A and B emergency diesel generator (EDG) engine rooms
- Unit 1 and 2; refueling water tank areas
- Unit 1 and 2; A, B, and C auxiliary feed water pump areas

b. Findings

No findings were identified

Enclosure

1R04 Equipment Alignment

Partial Equipment Walkdowns

a. Inspection Scope

The inspectors conducted partial alignment verifications of the five safety-related systems listed below. These inspections included reviews using plant lineup procedures, operating procedures, and piping and instrumentation drawings, which were compared with observed equipment configurations to verify that the critical portions of the systems were correctly aligned to support operability. The inspectors also verified that the licensee had identified and resolved equipment alignment problems that could cause initiating events or impact the capability of mitigating systems or barriers by entering them into the corrective action program (CAP). Documents reviewed are listed in the Attachment.

- 2B component cooling water (CCW) system while the 2A CCW system was out of service (OOS) for testing
- 2A high pressure safety injection (HPSI) system after returning the system to service following maintenance
- 1B EDG system while the 1A EDG was OOS for testing
- 2A and 2B auxiliary feed water (AFW) pumps while the 2C AFW pump was OOS for testing
- 2B EDG system while the 2A EDG was OOS for maintenance

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors toured 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 1 boric acid pump area

- Unit 2 boric acid pump area
- Unit 1 auxiliary feed water pump area
- Unit 2 B 4.16 KV emergency service switch gear room
- Unit 1 B emergency diesel generator engine building
- Unit 2 steam trestle main feed and main steam isolation valve areas

b. Findings

No findings were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

On February 22 and 25, the inspectors observed an unannounced fire drill that was simulated in the Unit 1 reactor auxiliary building 19.5-foot elevation locker room and the Unit 1 B emergency service switchgear room, respectively. The drills were 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 took 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 fire fighting techniques, (4) sufficient fire-fighting equipment brought to the scene, (5) effectiveness of command and control, (6) search for victims and propagation of the fire into other plant areas, (7) smoke removal operations, (8) utilization of pre-planned strategies, (9) adherence to the pre-planned drill scenario, and (10) drill objectives. 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 completes one sample of drill observations.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

Manhole Inspections (2 samples)

a. Inspection Scope

The inspectors performed inspections of Unit 1 manholes M156 and M227 as shown on licensee drawings 8770-G-701 and 9770-G-701, Electrical Manhole and Handhole Drainage System. The inspectors verified no evidence of water intrusion and that adequate drain piping was installed to allow dewatering capabilities. The inspectors looked for signs of cable splicing or damaged support structures. These two manholes were inspected in conjunction with the independent walkdown

requirements associated with completion of NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns as documented in section 4OA5.3 of this report. The inspectors also inspected manhole ECB#1 and observed testing of the manhole's sump pump. This manhole does not contain any safety-related components but is the end point of the gravity drainage system from manhole M227.

b. Findings

No findings were identified.

1R11 Licensed Operator Regualification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

On January 24, 2013, the inspectors observed and assessed three separate licensed operator crew actions during their licensed operator continuing training evaluated scenarios on the control room simulator. The scenarios included a steam generator tube leak; small break loss of coolant accident with a reactor trip; and dropped control rods with a reactor trip and a loss of off-site power. All scenarios included assessing emergency classifications and making emergency notifications. Documents reviewed are listed in the Attachment. The inspectors also reviewed simulator physical fidelity and specifically evaluated the following attributes related to the operating crew's 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 off-normal 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 specification 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 for the resident inspector quarterly review.

b. Findings

No findings were identified.

.2 Control Room Observations

a. Inspection Scope

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. 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

The following three periods of heightened activity and risk was observed:

- February 14, the inspectors observed control room operations during the Unit 2 failure of the 2A motor generator set that occurred during control rod surveillance testing. The inspectors observed the decisions made and actions taken to terminate the surveillance testing and restore the control rod system to a safe condition. The inspectors walked down the control room boards to verify the control rod system was placed in its normal operational lineup.
- March 12, the inspectors observed control room operations after a Unit 1 automatic reactor trip which was a result of the B MSIV closing due to a stem/disc separation. The inspectors observed decisions made and actions taken to stabilize the unit in a hot shutdown condition. The inspectors verified that the operator actions were in accordance with licensee emergency operating procedures.
- March 31, the inspectors observed Unit 1 startup activities subsequent to MSIV repairs. The inspectors verified that the unit was started up in accordance with licensee general procedure 1-GOP-302, Reactor Startup Mode 3 to Mode 2.

b. Findings

No findings were identified.

1R12 Maintenance Effectivenessa. Inspection Scope

The inspectors reviewed the performance data and associated action requests (ARs) for the two items 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, Maintenance Rule (MR). The inspectors' efforts focused on maintenance rule scoping, characterization of maintenance problems and failed components, risk significance, determination of a(1) and a(2) classification, corrective actions, and the appropriateness of established performance goals and monitoring criteria. The inspectors interviewed responsible engineers and observed some of the corrective maintenance activities. The inspectors also 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 1743211, 1C AFW Pump Lubricating Oil Leak
- AR 1779020, Unit 2A Start-up Transformer return to MR a(2) classification

b. Findings

No findings were identified.

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

The inspectors completed plant walkdowns, in-office reviews, and control room inspections of the licensee's risk assessment of six emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities were in accordance with 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 out of service (OOS) risk significant systems, structures, and components (SSCs) listed below. Documents reviewed are listed in the Attachment.

- Unit 2: steam bypass control valve PCV-8803, 2D instrument air compressor, emergency core cooling exhaust fan HVE-9B, 2BB battery charger, and main feed isolation valve HCV-09-2B OOS

- Unit 1: replacement of a 1B feedwater system control processor with steam bypass control valve PCV-8802 OOS
- Unit 2: 2A HPSI pump, 2A low pressure safety injection (LPSI) pump, 2A containment spray pump, A train containment sump and refueling water tank suction valves. Emergent work on 2A and 2C auxiliary feedwater pumps
- Unit 2: 2B HPSI pump, 2B LPSI pump, 2B containment spray pump, B train containment sump and refueling water tank suction valves OOS
- Unit 2: 2A EDG OOS due to an engine radiator coolant leak (emergent maintenance)
- Unit 1 Mode 5: 1B boric acid make up pump, 2A EDG, and 1B EDG OOS during shutdown cooling operations

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

a. Inspection Scope

The inspectors reviewed the following six action requests (ARs), interim dispositions, and operability determinations to ensure that operability was properly supported and the affected SSCs remained available to perform design safety functions with no increase in risk. The inspectors reviewed the applicable Updated Final Safety Analysis Report (UFSAR), and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition. Documents reviewed are listed in the Attachment.

- AR 1839202, Unit 2 steam bypass valve PCV-8803 actuator has bolts broken
- AR 1842000, Unit 1 1A2 reactor coolant pump controlled bleed-off low flow
- AR 1840273, Unit 2 power operated relief valve V1475 tail pipe temperature increase
- AR 1835019, Unit 2 elevated temperatures down-stream of code safety relief valve V1201
- AR 1851886, Unit 2 hydrazine tank cracked weld on the containment spray iodine removal system
- AR 1855973, interim disposition associated with the continued use of 1B MSIV (HCV-08-1B) valve body subsequent to closure event that was not previously analyzed

b. Findings

No findings were identified.

1R18 Plant Modificationsa. Inspection Scope

The inspectors reviewed the engineering change (EC) documentation for the one temporary modification listed below. The inspectors reviewed the 10 CFR 50.59 screening and evaluation, fire protection review, and environmental review to verify that the modification had not affected system operability and availability. The inspectors reviewed associated plant drawings and UFSAR documents impacted by this modification and discussed the changes with licensee personnel to verify the installation was consistent with the modification documents. Additionally, the inspectors verified that any issues associated with the modification was identified and entered into the licensee's CAP. Documents reviewed are listed in the Attachment.

- Engineering Change (EC)- 277967, Defeat Annunciator R-21 2A1 SIT Pressure Low-Low

b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the seven work orders (WOs) listed below, the inspectors reviewed the post maintenance 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 40210646, Repair steam bypass valve 2-PCV-8803
- WO 40215507, Replace 2C AFW pump trip and throttle valve MV-08-3 control relay
- WO 40139737, 2A component cooling water pump motor Inspection
- WO 40193551, Lube oil cooler for EDG engine 2A1
- WO 40017607, 1B boric acid make-up pump motor replacement
- WO 40148957, Replace 1B EDG motor controlled rheostat
- WO 40225770, Unit 1 ACC-3A control room air conditioner freon leak

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

Unit 1 forced outage March 12

a. Inspection Scope

On March 12, with the unit at full power, Unit 1 automatically tripped when a thermal margin/low pressure (TMLP) trip setpoint was exceeded. The TMLP setpoint is based, in part, on inputs associated with the differential steam pressure between A and B steam generators. The trip setpoint was exceeded due to the interruption of steam flow from the B steam generator. During the outage, the licensee completed internal inspections of both MSIVs. The inspections identified contact between the valve disc swing arm and the valve body on both valves which resulted in additional stress placed on the actuator-to-valve disc linkage assemblies when the valves were in the open position. The B MSIV linkage assembly failed causing the valve to close. The A MSIV linkage assembly was found damaged. Both valves were repaired.

Monitoring of Shutdown Activities

The inspectors observed portions of the cooldown process to verify that technical specification cooldown restrictions were followed. The inspectors conducted a containment walkdown after the shutdown to assess the condition of the systems within containment that are inaccessible with the unit at power. The inspectors performed walkdowns of important systems and components used for decay heat removal from the reactor core during the shutdown period including the intake cooling water system and CCW system.

Outage Activities

The inspectors examined outage activities to verify that they were conducted in accordance with technical specifications (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:

- Verified operability of reactor coolant system (RCS) pressure, level, flow, and temperature instruments during various modes of operation
- Verified electrical systems availability and alignment
- Verified shutdown cooling system operation
- Evaluated implementation of reactivity controls
- Examined containment foreign material exclusion (FME) controls put in place for the limited work inside containment

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 verified containment integrity was properly established. The

inspectors performed a containment closeout inspection prior to reactor plant start up. The inspectors witnessed portions of the RCS heat up, reactor startup, and power ascension. On March 31, the inspectors verified that startup activities were performed in accordance with licensee general operating procedure 1-GOP-302, Reactor Startup Mode 3 to Mode 2.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors either reviewed or witnessed the following six surveillance tests to verify that the tests met the TS, the UFSAR, the licensee's procedural requirements, and 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 the positions/status required for the system to perform its safety function. The inspectors verified that surveillance issues were documented in the CAP. Documents reviewed are listed in the Attachment.

In-Service Test:

- 1-OSP-03.05A, 1A High Pressure Safety Injection Pump Code Run

RCS Leakage Detection Surveillance:

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

Surveillance Test:

- 2-OSP-63.01, RPS Logic Matrix Test
- 2-OSP-59.01B, 2B Emergency Diesel Generator Monthly Surveillance (Fast Start)
- 2-OSP-66.01, Control Element Assembly Quarterly Exercise
- 2-SMI-66.12, Operational CEA Block Circuit Functional Test

b. Findings

No findings were identified.

REACTOR SAFETY

Cornerstone: Emergency Preparedness

1EP2 Alert and Notification System Evaluationa. Inspection Scope

The inspectors evaluated the adequacy of the licensee's methods for testing the alert and notification system in accordance with NRC Inspection Procedure 71114, Attachment 02, Alert and Notification System Evaluation. The applicable planning standard, 10 CFR Part 50.47(b)(5) and its related 10 CFR Part 50, Appendix E, Section IV.D requirements were used as reference criteria. The criteria contained in NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, Revision 1, were also used as a reference.

The inspectors reviewed various documents which are listed in the Attachment, interviewed personnel responsible for siren maintenance, verified placement of several sirens, and inspected one siren control cabinet. This inspection activity satisfied one inspection sample for the alert and notification system on a biennial basis.

b. Findings

No findings were identified.

1EP3 Emergency Response Organization Staffing and Augmentation Systema. Inspection Scope

The inspectors reviewed the licensee's emergency response organization (ERO) augmentation staffing requirements and process for notifying the ERO to ensure the readiness of key staff for responding to an event and timely facility activation. The qualification records of key position ERO personnel were reviewed to ensure all ERO qualifications were current. A sample of problems identified from augmentation drills or system tests performed since the last inspection was reviewed to assess the effectiveness of corrective actions.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 03, Emergency Response Organization Staffing and Augmentation System. The applicable planning standard, 10 CFR 50.47(b)(2), and its related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the ERO staffing and augmentation system on a biennial basis.

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b. Findings

No findings were identified.

1EP5 Maintenance of Emergency Preparedness

a. Inspection Scope

The inspectors reviewed the corrective actions identified through the emergency preparedness program to determine the significance of the issues, the completeness and effectiveness of corrective actions, and to determine if issues were recurring. The licensee's drill and exercise critique reports, self-assessments, and audits were reviewed to assess the licensee's ability to be self-critical, thus avoiding complacency and degradation of their emergency preparedness program. The licensee's 10 CFR 50.54(q) change process and selected evaluations of emergency preparedness document revisions were reviewed to assess adequacy. The inspectors toured facilities and reviewed equipment and facility maintenance records to assess licensee's adequacy in maintaining them. During tours of the simulator, the inspectors observed licensee staff demonstrate the capabilities of selected radiation monitoring instrumentation used to detect dose rates of selected areas of the plant to adequately support declaration of the effected emergency action levels (EALs). In addition, the inspectors reviewed licensee procedures and training for the evaluation of changes to the emergency plans.

The inspection was conducted in accordance with NRC Inspection Procedure 71114, Attachment 05, Maintenance of Emergency Preparedness. The applicable 10 CFR 50.47(b) planning standards and related 10 CFR 50, Appendix E requirements were used as reference criteria.

The inspectors reviewed various documents which are listed in the Attachment. This inspection activity satisfied one inspection sample for the maintenance of emergency preparedness on a biennial basis.

b. Findings

No findings were identified.

1EP6 Drill Evaluation

.1 Emergency Preparedness Drills

a. Inspection Scope

On January 24, the inspector observed and assessed three licensed operator crews' performance during an evaluated licensed operator continued training scenario using the control room simulator. The simulated scenario included assessing classification of the emergency events and making notifications to the state and the NRC. The

inspectors assessed the licensee's actions to verify that emergency classifications and notifications were timely and made in accordance with the licensee emergency plan implementing procedures and 10 CFR 50.72 requirements. This completes one sample of drill observations.

b. Findings

No findings were identified.

.2 Emergency Preparedness Drills

a. Inspection Scope

On February 27, during a site emergency preparedness drill exercise, the inspectors observed operators in the control room simulator address plant equipment issues and take actions to mitigate degrading plant conditions, and observed initiation of the emergency coordinator responsibilities immediately following an Alert classification. Additionally, the inspectors observed the licensee's site emergency response organization staff in the technical support center and the emergency operating facility during the drill to verify the licensee properly classified emergency events, made the required notifications, and made appropriate protective action recommendations. The drill scenario included a loss of off-site power and a loss of coolant accident followed by an emergency diesel generator failure leading to a station blackout. The Unit 2 plant conditions degraded to a point where the licensee declared a General 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 Alert, Site Area Emergency and General 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: (1) the initial activation of the emergency response centers was timely and as specified in the licensee's emergency plan, (2) the required TS actions for the drill scenario were reviewed to assess correct implementation, (3) the licensee identified critique items were discussed and reviewed to verify that drill weaknesses were identified and captured in the CAP.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

.1 Initiating Events Cornerstones

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period January 1, 2012 through December 31, 2012, to verify the accuracy of the PI data reported during that period. Performance indicator definitions and guidance contained in NEI 99-02, Regulatory Assessment Performance Indicator Guideline, and licensee procedures ADM-25.02, NRC Performance Indicators, and NAP-206, NRC Performance Indicators, 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. Documents reviewed are listed in the Attachment.

Unit 1

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Scrams With Complications
- Unplanned Power Changes per 7000 Critical Hours

Unit 2

- Unplanned Scrams per 7000 Critical Hours
- Unplanned Scrams With Complications
- Unplanned Power Changes per 7000 Critical Hours

b. Findings

No findings were identified.

.2 Emergency Preparedness Cornerstone

a. Inspection Scope

The inspectors sampled licensee submittals relative to the PIs listed below for the period April 1, 2012, through December 31, 2012. 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, were used to confirm the reporting basis for each data element.

- Drill/Exercise Performance (DEP)
- Emergency Response Organization Drill Participation (ERO)
- Alert and Notification System Reliability (ANS)

For the specified review period, the inspector examined data reported to the NRC, procedural guidance for reporting PI information, and records used by the licensee to identify potential PI occurrences. The inspectors verified the accuracy of the PI for ERO drill and exercise performance through review of a sample of drill and event records. The inspectors reviewed selected training records to verify the accuracy of the PI for ERO drill participation for personnel assigned to key positions in the ERO. The inspectors verified the accuracy of the PI for alert and notification system reliability through review of a sample of the licensee's records of periodic system tests. The inspectors also interviewed the licensee personnel who were responsible for collecting and evaluating the PI data. Licensee procedures, records, and other documents reviewed within this inspection area are listed in the Attachment. This inspection satisfied three inspection samples for PI verification on an annual basis.

4OA2 Identification and Resolution of Problems

.1 Daily Reviews

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 Review – Operator Actions in Response Unexpected Movement of Control Element Assemblies

a. Inspection Scope

The inspectors performed a more in-depth review of action request (AR) 1746072 to evaluate the operator's response to unexpected rod movement that occurred during zero power physics testing on March 18, 2012. The inspectors reviewed control room logs and the licensee's post trip report including the transient assessment and operating crew statements. The inspectors interviewed licensee personnel and evaluated the operator's response to the event using the guidance provided in the following licensee procedures:

- 1-AOP-66.01, Dropped or Misaligned CEA Abnormal Operations
- 3200091, Reload Startup Physics Testing
- OP-AA-100-1000, Conduct of Operations
- OP-AA-103-1000, Reactivity Management

The licensee had previously submitted licensee event report (LER) 05000335/2012-002-00 and supplement 01 of the LER to the NRC to report the manual reactor trip that occurred as a result of the rod movement. The inspector's review of the licensee's root cause analysis and corrective actions taken to address the control element assembly malfunction, as well as the closure of the LER and associated supplement, is documented in Section 4OA3 of this report.

b. Findings and Observations

On March 18, 2012, the Unit 1 operating crew was performing rod worth measurements by rod swap in accordance with the zero power physics test procedure. As regulating group 3 was being inserted by operators to establish the required negative reactivity for the test, six of the eight control element assemblies (CEAs) continued to insert when the rod control switch was released. Operators promptly recognized the undemanded negative reactivity insertion and took action to place rod select power in off. This action terminated the inward motion of the six affected control element assemblies. The operating crew then discussed the CEA insertion and elected to restore rod select power and monitor CEA response to determine if operator control of the CEAs could be restored. The operators restored rod select power and six of the eight CEAs continued to insert without operator demand. Operators immediately placed rod select power to off and manually tripped the unit. The trip was uncomplicated and the operators carried out post-trip actions.

The inspectors noted that procedure 3200091, Appendix H, Actions for Misaligned CEA during Unit 1 HZP Physics Testing, detailed immediate operator actions to perform in response to misaligned CEAs during the test. The inspectors also noted that the operator actions provided by Appendix H paralleled those contained in the abnormal operating procedure for a dropped or misaligned CEA. The immediate operator actions, in part, required operators to ensure that rod select power was off; and, if more than two CEAs were misaligned by greater than 15 inches, then to manually trip the reactor as directed by the shift manager or unit supervisor. The inspectors reviewed rod position data to determine the amount of CEA misalignment that occurred as a result of the CEA malfunction. The inspectors determined that at the time that the rod select power was first secured to terminate inward CEA motion, six of the affected CEAs were misaligned by approximately 21 inches. After the operators restored power to the CEAs to check for control, the affected CEAs inserted an additional three inches before operators manually tripped the unit. The inspectors learned that when the operators first secured rod select power and discussed necessary actions to stabilize the unit, the operators had not reviewed or otherwise checked indicated rod positions and were unaware that six of the eight CEAs were misaligned by greater than 15 inches before restoring power to the CEAs. The operators also stated they did not enter Appendix H of the test procedure and were

concerned with taking prompt action to determine if CEA control could be maintained in order to stop the negative reactivity transient that was occurring. The inspectors also noted that the licensee's post trip review of crew performance did not identify that the operator's decision to restore rod select power in response to CEA misalignment was not consistent with immediate operator actions specified by Appendix H of the test procedure.

The inspectors concluded that the failure to follow the immediate operator actions for misaligned CEAs as described by Appendix H of the reload startup physics testing procedure was a performance deficiency. Specifically, the procedure directed operators to respond to CEA misalignment by manually tripping the unit if more than two CEAs were misaligned by greater than 15 inches, and contrary to those actions, operators responded to a CEA malfunction by restoring power to CEAs that were misaligned by 21 inches prior to tripping the unit.

The inspectors screened the performance deficiency in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, Issue Screening, dated September 7, 2012, and determined that, in this case, the performance deficiency was minor. The minor determination was based on operator actions taken in response to an insertion of negative reactivity into a sub critical core. Also, the impact of three additional inches of CEA misalignment on core flux which resulted from the performance deficiency was minimal. Therefore, the inspectors concluded that the performance deficiency was not a precursor to a significant event, would not have led to a more significant safety concern, did not relate to a performance indicator, and did not adversely affect a cornerstone objective.

The inspectors determined that the performance deficiency resulted in a minor violation of St. Lucie Technical Specification 6.8.1.a, Procedures and Programs, because Appendix H of the test procedure was required to be implemented by Section 6 of Appendix A to Regulatory Guide 1.33, Quality Assurance Program Requirements, Revision 2. Compliance with operator actions specified in Appendix H of the test procedure was restored when the operators ultimately did perform a manual trip of the reactor as required by the procedure. In response to the inspector's conclusions, the licensee entered this issue into the corrective action program as AR 1858250. This failure to comply with technical specification 6.8.1.a constitutes a minor violation that is not subject to enforcement action in accordance with the NRC's Enforcement Policy.

.3 Annual Sample: Apparent Cause Evaluation Associated with Aligning Seismically Qualified Refueling Water Tanks to Non-Seismic Piping

a. Inspection Scope

On August 20, 2012, the licensee issued Licensee Event Report (LER) 05000335, 389/2012-004-00 documenting the past practice of aligning both units' seismically qualified safety-related refueling water tank (RWT) to a non-seismic, non-safety-related spent fuel pool (SFP) purification system rendering the tank inoperable when required in Modes 1 - 4. Licensee action request (AR) 1756212 addressed the

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corrective actions associated with the LER. The AR was reviewed by the inspectors in detail to evaluate the effectiveness of the licensee's corrective actions. The inspectors also assessed whether the issue was properly identified, documented accurately and completely, properly classified and prioritized, adequately considered extent of condition, generic implications, common cause, and previous occurrences, adequately identified root causes/apparent causes, and identified appropriate and timely corrective actions. The inspectors verified the licensee's actions were in accordance with licensee procedures, PI-AA-204, Condition Identification and Screening, and PI-AA-205, Condition Evaluation and Corrective Actions. The closure of the LER is documented in section 4OA3.3 of this report.

b. Findings and Observations

The inspectors determined that the licensee had an opportunity to identify and correct this issue approximately a year prior to the issuance of a related NRC Information Notice. A non-cited violation is documented below.

Introduction: A Green, non-cited violation of 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," was identified by the inspectors for the failure to promptly identify and correct a condition adverse to quality (CAQ) involving alignment of the safety-related RWT to a non-seismic SFP purification system.

Description: The inspectors reviewed historical corrective action program (CAP) documents relating to the problem documented in the LER. The inspectors noted that in October 2010 there were two ARs entered into the licensee's CAP for an operating experience (OE) event involving another utility who later received a non-cited violation for a similar occurrence in which a safety-related refueling water storage tank (RWST) was aligned to a non-seismic purification system. The first AR (583881) contained preliminary OE information and had an assignment to "review operating experience for site applicability." This assignment was cancelled without explanation. A second AR (589182) documented a discussion by NRC OE staff during an October 20, 2010 Reactor Oversight Process task force meeting. The discussion centered on the same industry event described above where operators had aligned the seismically qualified tank to a non-safety, non-seismically qualified system during power operations. The AR documented the NRC's position that the operators at the utility "should have declared the RWST inoperable and entered the [technical specification (TS)] action statement" and the "NRC is pursuing a finding as a technical specification compliance issue." The licensee's evaluation of this second AR resulted in their determination that they were within their design basis and the RWT remained operable while aligned to the non-seismic system. This conclusion was based on the use of manual operator actions to isolate the non-seismic system from the RWT after a seismic event. The licensee also determined that it was "very unlikely" that the non-seismic piping would fail and if it does fail and leak, manual operator actions in place would isolate the non-seismic purification system from the RWT before the RWT water level reached technical specification limits. The corrective actions for this AR included procedure changes to maintain a higher minimum RWT water level during periods the tank was aligned to purification. This

would allow up to 30 minutes (a change from 20 minutes) for the manual operator actions.

In April 2012, in response to NRC Information notice (IN) 2012-01, Seismic Considerations – Principally Issues Involving Tanks, the licensee initiated AR1769593. This IN specifically stated that TSs would not allow applying compensatory measures, such as manual actions in place of a closed boundary valve, for periods longer than the TS completion time for restoring the RWST to operable status. Corrective actions included implementing administrative actions to preclude this alignment when the RWT is required to be operable. Prior to April 2012, each units' RWT had been routinely aligned to its SFP purification system 3 to 4 days each week for tank cleanup. The inspectors' review of the LER revealed that the cause of the event was incorrect application of compensatory measures for planned maintenance activities.

The inspectors concluded that the licensee did not identify a CAQ regarding the inoperability of the RWT when aligned to the non-safety-related SFP purification system because a complete and thorough evaluation was not performed during the review of two 2010 ARs noted above.

Analysis: The failure to promptly identify and correct the CAQ for the alignment of the RWT to the SFP purification system was a performance deficiency. The performance deficiency was more than minor because it affected the configuration control attribute of the mitigating systems cornerstone and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Specifically the alignment of the safety-related RWT to the non-seismic SFP purification system created a CAQ and rendered the RWT inoperable for greater than its allowed outage time. The inspectors evaluated the finding in accordance with NRC IMC 0609, "Significant Determination Process," Attachment 4 and Appendix A and determined that the finding required a phase 3 evaluation by a senior reactor analyst. The analyst calculated the change in conditional core damage probability (ΔCCDP) due to the postulated loss of the RWT during an event, multiplied by the frequency of a seismic event that could require the use of the RWT (e.g., loss of coolant accident) and applied an exposure time factor (4 days/7 days). The dominant sequence was a steam generator tube rupture which proceeds to core damage due to a lack of high or low pressure injection water supply. The risk was mitigated by the low probability of a seismic event. The analysis determined that the risk increase of the performance deficiency was an increase in large early release frequency less than $1\text{E-}7/\text{year}$ which is a GREEN finding of very low safety significance.

The cause of the finding involved the cross-cutting area of problem identification and resolution, the component of corrective action program, and the aspect of complete and thorough evaluation, P.1(c), because the licensee failed to properly evaluate for operability the practice of aligning a seismically qualified RWT to a non-seismic purification system.

Enforcement: 10 CFR 50, Appendix B, Criterion XVI states, in part, that measures shall be established to assure that CAQs are promptly identified and corrected. Contrary to the above, in October, 2010, the licensee failed to promptly identify and correct a CAQ involving alignment of the safety-related RWT to a non-seismic SFP purification system. Because the finding was of very low safety significance (Green) and was entered into the licensee's CAP as AR 1756212, this violation is being treated as an NCV, consistent with Section 2.3.2 of the NRC Enforcement Policy: NCV 05000335, 389/2013002-01, Failure to Promptly Identify and Correct a Condition Adverse to Quality for Alignment of the Safety-Related Refueling Water Tank to a Non-Seismic Spent Fuel Pool Purification system.

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

.1 (Closed) Licensee Event Report (LER) 05000335/2012-002-00 (and Supplement 01) Manual Trip during Physics Testing Due to Unexpected Movement of Control Element Assemblies (CEAs)

On March 18, 2012, while Unit 1 was subcritical and the licensee was performing zero power physics testing, the reactor was manually tripped by operators in the control room following unexpected control element assembly (CEA) movement. The manual reactor trip was uncomplicated and all CEAs fully inserted. The licensee submitted LER 05000335/2012-002-00 to the NRC in accordance with 10 CFR 50.73(a)(2)(iv)(A) as an event or condition that resulted in manual or automatic actuation of the Reactor Protection System including reactor scram or reactor trip. The licensee later submitted Supplement 1 to the LER in order to communicate the results of the root cause evaluation and the status of corrective actions. The licensee identified that the root cause of the issue was inadequate design control measures which introduced signal noise into the timing modules of the CEAs. The signal noise was incompatible with test equipment being used to perform zero power physics testing and resulted in unexpected CEA movement during performance of the test. The inspectors reviewed the LER (including Supplement 1), the licensee's root cause evaluation, and the post-trip report to gain a better understanding of the circumstances which led to manual reactor trip and to verify that the plant systems and operators responded to the event as required. In addition, the inspectors performed an in-depth review of the operator's actions in response to the unexpected rod movement that is documented in Section 4OA2.2 of this report. The inspectors evaluated the accuracy of the information submitted in the LER, licensee conformance with regulatory requirements, and potential generic implications related to the event. Additionally, the inspectors evaluated the licensee's corrective actions to determine if the actions appropriately addressed the causes that were identified in the licensee's root cause evaluation. The LER and its associated supplement were reviewed. A minor violation related to operator actions taken in response to the unexpected rod motion is documented in Section 4OA2.2 of this report. The LER and Supplement 1 are closed.

.2 (Closed) LER 05000335/2012-010-00, Degraded Manhole Conduit Seals Bypassed External Flood Protection

a. Inspection Scope

On November 1, 2012, licensee engineering completed their review of the cumulative effects of degraded and missing conduit seals in the electrical manholes that provided a leakage path into Unit 1 and 2 reactor auxiliary buildings (RABs). The degraded and missing penetrations were identified during walkdowns completed in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the *Code of Federal Regulations* 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (ADAMS Accession No. ML12053A340). The licensee determined that the as-found condition of Unit 1 conduit seals could have resulted in flooding of the Unit 1 RAB during a probable maximum hurricane (PMH) greater than the internal flooding analysis of record. The licensee also found similarly degraded and missing penetrations in Unit 2; however, the cumulative effect of flooding during a postulated PMH would be bounded by the internal flooding analysis. The inspectors checked the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors reviewed the licensee's flooding analysis methodology for both units and found it to be reasonable. The inspectors walked down Unit 1 and 2 RABs to determine whether any other safety-related equipment other than the Unit 1 boric acid pumps could be impacted from flooding during a PMH. As documented in section 4OA5.3, the inspectors, on a sampling basis, also performed independent walkdowns to verify that the licensee completed the actions associated with the letter noted above.

b. Findings

Introduction: An NRC identified non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion III, "Design Control," was identified associated with the licensee's failure to ensure that all below grade Unit 1 and 2 reactor auxiliary building (RAB) penetrations were adequately sealed as required by the licensee's design basis. Specifically, the licensee identified Unit 1 and 2 RAB penetrations with missing or degraded seals. The licensee's design basis requires these penetrations to be waterproofed or flood protected.

Description: In September 2012, the licensee identified below grade Unit 1 and Unit 2 RAB penetrations with missing or degraded penetration seals. The missing and degraded penetration seals were found during licensee inspections performed in response to a letter from the NRC to licensees, entitled "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12053A340)."

The licensee's engineering analysis determined that the Unit 1 RAB missing and degraded penetration seals would have allowed flood water from a PMH event to enter the RAB. The RAB flooding would exceed the amount analyzed in the internal flooding analysis and could have resulted in the loss of both boric acid transfer pumps. Safety-related equipment necessary to maintain the unit in a safe shutdown condition would not have been impacted. The Unit 2 engineering analysis determined that the amount of leakage into the Unit 2 RAB was bounded by the internal flooding analysis of record and would not have impact equipment important to safety.

The inspectors reviewed the licensee's engineering analysis assumptions and methodology in determining the amount of external leakage through the degraded and missing electrical penetration seals into both units' RAB and determined that the assumptions and methodology were reasonable. The inspectors walked down both units' RAB and determined that no other equipment important to safety would have been impacted during the event.

The significance of this issue is mitigated by the fact that both units would have been shutdown and cooled down to at least Mode 5 (<200°F) during a PMH event in accordance with licensee procedure 0005753, Severe Weather Preparations. Procedure 0005753, required the units to be shutdown in Mode 5 (<200°F) at least two hours before the projected onset onsite of sustained hurricane force winds for a Category 4 or 5 hurricane.

This issue was placed in the licensee's corrective action program as action request (AR) 1804496 (Unit 1) and AR1800822 (Unit 2). Corrective actions completed included restoring the degraded or missing seals to design requirements.

Analysis: The performance deficiency associated with this finding involved the licensee's failure to comply with the requirements of 10 CFR Part 50, Appendix B, Criterion III, "Design Control." Specifically, since original plant construction, the licensee failed to maintain Unit 1 and 2 RAB penetrations in accordance with design requirements. This finding is more than minor because it affects the protection against external factors attribute of the mitigating system cornerstone, and affected the cornerstone objective of ensuring availability, reliability, and capability of systems that respond to initiating events. Using Manual Chapter 0609.04, Initial Characterization of Findings, Table 2, dated June 19, 2012, the finding was determined to affect an external event mitigation system and affected the Mitigating System cornerstone. Although the finding existed with the units at power and during shutdown conditions since original plant construction, the risk was assessed using Manual Chapter 0609 Appendix G, Attachment 1 Shutdown Operations Significance Determination Process Phase 1 Operational Checklists for both PWR's and BWR's dated May 25, 2004 using checklists 1 through 4. Appendix G was utilized since both units would have been shutdown prior to the PMH event and associated external flood. Due to the accuracy of weather forecasting, there would be several days for the licensee to prepare for a PMH. The inspectors reviewed the finding with the regional senior reactor analyst and determined that the licensee would have adequate time to ensure that the mitigating capability of core heat removal, inventory

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control, emergency AC power, containment control, or reactivity control systems would have been available prior to the PMH affecting the site. The finding screened as Green because none of the attributes in the checklists were adversely impacted.

No cross cutting aspects were assigned to the finding. The finding does not represent current licensee performance because the degraded and missing penetrations have existed since original construction of the plant.

Enforcement: 10 CFR 50, Appendix B, Criterion III, Design Controls, requires, in part, that measures shall be established to assure that applicable regulatory requirements and the design basis are correctly translated into specifications, drawings, procedures and instructions. These measures shall include provisions to assure that appropriate quality standards are specified and included in design documents and that deviations from such standards are controlled. The licensee's design basis does not allow for any external leakage into safety-related buildings during a PMH. Unit 1 UFSAR section 3.4.4, states in part, that "All external building penetrations are waterproofed and/or flood protected to preclude the failure of safety related system or component due to external flooding." Unit 2 UFSAR, section 2.4.2.2.b states, in part, "Flood protection criteria is established at elevation 19.5 feet MLW whereby exterior doors and penetrations which lead to areas containing safety related equipment are made watertight through use of boots, waterstops and waterproofing." Unit 1, licensee drawing 8770-B-328, sheet 4A, Revision 6, specifies that all ductbank entry into safety related buildings at or below the PMH flood level shall be sealed. Unit 2 drawing 2998-C-348, sheet 1, Revision 5, specifies that all conduit entries into safety related buildings at or below grade shall be sealed.

Contrary to the above, the licensee did not assure that deviations from the design basis were controlled when below grade conduit penetrations were originally installed. Additionally, other seals that were originally installed were not maintained. Specifically, in September 2012, the licensee identified Unit 1 and 2 degraded and missing conduit penetrations seals that had not been originally installed or maintained as required by the design basis. As a result, during PMH conditions, water in-leakage through the penetrations would result in the flooding of the -0.5 foot elevation of both units' RAB. The flooding could have resulted in the loss of both Unit 1 boric acid makeup pumps. Because the licensee entered the issue into their corrective action program as ARs 1804496 and 1800822, 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, 389/2013002-02, Failure to Ensure Reactor Auxiliary Building Penetrations were Adequately Flood Protected.

.3 (Closed) LER 05000335/2012-004-00, Seismically Qualified Refueling Water Tank Aligned to Non-Seismic Piping

On August 1, 2012, the licensee determined that opening a manual boundary valve between the safety-related and seismically qualified refueling water tank (RWT) and the non-safety and non-seismically qualified purification system in Modes 1 – 4 rendered the RWT inoperable. The cause of the event was the incorrect application of the use of manual operator actions in maintaining operability of the RWT when in this

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configuration. The inspectors reviewed the LER and AR 1756212 that documented the event. Additional information and the regulatory significance of this issue are documented in section 4OA2.3. This LER is closed.

.4 (Closed) LER 05000389/2012-003-00, Inadvertent Trip of 2B3 4.16 kv Switchgear

On October 7, 2012, Unit 2 was defueled; the A electrical train was protected and providing spent fuel pool cooling. The licensee was executing planned B electrical train work activities. The 2B3 4.16kv essential bus was not required to be operable. During the process of racking in the 2B component cooling water (CCW) pump breaker, plant personnel inadvertently caused the 2B3 4.16kv essential bus to de-energize. Prior to the event, the B EDG was supplying power to the bus and as a result of the event, the EDG's output breaker immediately tripped opened and the EDG transferred to emergency mode. Throughout the event, the 2A EDG and all A train equipment remained operable.

The licensee's apparent cause evaluation found that the reason the 4.16kv bus inadvertently de-energized was a result of plant personnel shorting out a set of differential relay terminals located on the inside of the door to the 2B CCW pump breaker. This relay actuation caused a differential current lockout on the electrical bus. The evaluation concluded that the plant personnel were not fully aware of the risk significance associated with the unprotected differential relay terminals as a result of not having performed an adequate work assessment of the "immediate work area" as required by licensee's conduct of maintenance procedure prior to starting the work. Due to ongoing outage work, scaffolding and other equipment was in the immediate area which resulted in a small work space available to perform the planned activity. The reduced work space could have been better assessed and other precautions implemented prior to performing the planned work. Corrective actions included a bulletin providing a brief on working in areas of limited space while emphasizing inspecting for nearby objects prior to beginning work.

The inspectors reviewed the LER and AR 1810742 documenting this event, and interviewed licensee personnel associated with the event and investigation. The inspectors checked the accuracy and completeness of the LER and the appropriateness of the licensee's corrective actions. The inspectors reviewed the licensee's CAP data base and did not identify any other similar issues relating to an inadequate pre-job site risk assessment. The inspectors determined that the licensee's failure to perform an adequate risk assessment of the job site as required by licensee's conduct of maintenance procedure prior to starting the job activity was a performance deficiency (PD) that was not a violation of NRC requirements.

The inspectors screened the performance deficiency in accordance with Inspection Manual Chapter (IMC) 0612, Appendix B, Issue Screening, dated September 7, 2012, and determined that, in this case, the performance deficiency was minor. The PD was minor because it did not cause any required safety related equipment to become inoperable as this job was planned well in advance and was scheduled to occur during a time that the B electrical train was not required to be operable. The

inspectors concluded that the PD was not a precursor to a significant event, did not have the potential to lead to a more significant safety concern, was not related to a performance indicator that would have caused the performance indicator to exceed a threshold, and did not adversely affect any of the cornerstone objectives listed at the end of manual chapter 0612 Appendix B. No findings were identified. This LER is closed.

.5 Personnel Performance During Unplanned Plant Operations

Unit 1 Automatic Reactor Trip

a. Inspection Scope

The inspectors observed personnel performance immediately following a Unit 1 automatic reactor from 100 percent RTP that occurred on March 12. The inspectors reviewed plant status, equipment and personnel performance associated with the trip. The trip was initiated by the closure of the 1B main steam isolation valve due to a stem/disc separation. The inspectors reviewed post-trip actions that placed the plant in a safe condition. The inspectors reviewed the licensee's post trip report which included a record of plant transient parameters and operator logs. Additionally, the inspectors interviewed operators, attended post-trip review meetings, and verified emergency operating procedure compliance. The inspectors discussed the trip with operations, engineering, and licensee management personnel to gain an understanding of the event and assess follow-up actions to provide input to the NRC decision making process regarding the need for a special or augmented NRC inspection.

b. Findings

No findings were identified

4OA5 Other Activities

.1 Quarterly Resident Inspector Observations of Security Personnel and Activities

a. Inspection Scope

During the inspection period the inspectors conducted observations of security force personnel activities to ensure that the activities were consistent with the licensee security procedures and regulatory requirements relating to nuclear plant security. These observations took place during both normal and off-normal plant working hours.

These quarterly resident inspector observations of security force personnel and activities did not constitute any additional inspection samples. Rather, they were considered an integral part of the inspectors' normal plant status reviews and inspection activities.

b. Findings

No findings were identified.

.2 Independent Spent Fuel Storage Installation (ISFSI) Inspections (IP 60855.1)

a. Inspection Scope

The inspectors reviewed reported changes made to the licensee's procedures and programs for the ISFSI to verify the changes made were consistent with the license and Certificate of Compliance (CoC) and did not reduce the effectiveness of the program. The inspectors, through direct observation and independent evaluation, verified cask loading activities were performed in a safe manner and in compliance with approved procedures. Based on direct observation and review of selected records, the inspectors verified the licensee had properly identified each fuel assembly and insert placed in the ISFSI, had recorded the parameters and characteristics of each fuel assembly and insert, and had maintained a record of each as a controlled document. The inspectors observed activities associated with the transport and storage of casks, loading of spent fuel in casks, vacuum drying and seal welding activities, and the heavy lifts to remove the casks from the spent fuel pool and place it in the cask handling facility. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.3 (Closed) NRC Temporary Instruction (TI) 2515/187, Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns

a. Inspection Scope

The inspectors verified that licensee's walkdown packages for areas including Unit 1 east side of auxiliary building 19.5 foot elevation, Unit 2 east side of auxiliary building 19.5 foot elevation, and west side of Unit 2 auxiliary building 19.5 foot elevation contained the elements as specified in NEI 12-07 Walkdown Guidance document.

The inspectors accompanied the licensee on their walkdowns and verified that the licensee confirmed the following flood protection features using visual observation or by review of other documents.

- Unit 2 auxiliary building east wall door flooding stop logs staged and ready for use
- All exterior wall penetrations of Unit 1 and Unit 2 auxiliary building were properly sealed
- Various Unit 1 and Unit 2 electrical wire way manhole inspections for penetration seal conditions

The inspectors independently performed their walkdown and verified that the following flood protection features were in place:

- Unit 1 and Unit 2 auxiliary building perimeter walls properly sealed and associated stop logs staged and ready for usage on Unit 2
- Selected one electrical wire way manhole on each unit to verify dewatering capability and wall cable penetration seal conditions

The inspectors verified that noncompliances with current licensing requirements, and issues identified in accordance with the 10 CFR 50.54(f) letter, Item 2.g of Enclosure 4, were entered into the licensee's corrective action program. In addition, issues identified in response to Item 2.g that could challenge risk significant equipment and the licensee's ability to mitigate the consequences will be subject to additional NRC evaluation.

b. Findings

No findings were identified.

4OA6 Meetings

Exit Meeting Summary

The resident inspectors presented the inspection results to Mr. Jensen and other members of licensee management on April 8, 2013. 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

KEY POINTS OF CONTACT

Licensee personnel:

J. Jensen, Site Vice President
C. Bach, Chemistry Manager
E. Belizar, Projects Manager
C. Bible, Engineering Director
D. Calabrese, Emergency Preparedness Manager
D. DeBoer, Operations Director
M. Baughman, Training Manager
R. Filipek, Engineering Design Manager
J. Hamm, Maintenance Director
M. Bladek, Assistant Operations Manager
B. Coffey, Plant General Manager
E. Katzman, Licensing Manager
D. Tanis, Site Safety Manager
R. McDaniel, Fire Protection Supervisor
C. Martin, Health Physics Manager
J. Owens, Performance Improvement Manager
P. Rasmus, Assistant Operations Manager
M. Snyder, Nuclear Quality Assurance Manager
M. Seidler, Security Manager (Acting)

NRC personnel:

D. Rich, Chief, Branch 3, Division of Reactor Projects
J. Hanna, Senior Reactor Analyst, Division of Reactor Projects

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened and Closed

05000335, 389/2013002-01	NCV	Failure to Promptly Identify and Correct a Condition Adverse to Quality for Alignment of the Safety-Related Refueling Water Tank to a Non-Seismic Spent Fuel Pool Purification system (Section 4OA2.3)
05000335, 389/2013002-02	NCV	Failure to Ensure Reactor Auxiliary Building Penetrations were Adequately Flood Protected (Section 4OA3.2)

Closed

05000335/2012-002-00, 01	LER	Manual Trip during Physics Testing Due to Unexpected Movement of Control Element Assemblies (CEAs) (Section 4OA3.1)
05000335/2012-010-00	LER	Degraded Manhole Conduit Seals Bypassed External Flood Protection (Section 4OA3.2)
05000335/2012-004-00	LER	Seismically Qualified Refueling Water Tank Aligned to Non-Seismic Piping (Section 4OA3.3)
05000389/2012-003-00	LER	Inadvertent Trip of the 2B3 4.16 kv Switchgear (Section 4OA3.4)
05000335, 389/2515/187	TI	Inspection of Near-Term Task Force Recommendation 2.3 Flooding Walkdowns (Section 4OA5.3)

LIST OF DOCUMENTS REVIEWEDSection 1R01: Adverse Weather ProtectionProcedures

0005753, Severe Weather Preparations

Section 1R04: Equipment AlignmentProcedures

2-NOP-14.01, Component Cooling Water System Initial Alignment

2-NOP-03.11, High Pressure Injection System Initial Alignment

2-OSP-03.11, Monthly HPSI/LPSI Position Checks

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

2-NOP-09.11, Auxiliary Feedwater System Initial Alignment

2-NOP-59.01B, 2B Emergency Diesel Generator Standby Lineup

Section 1R05: Fire ProtectionProcedures

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

Procedures

St. Lucie Plant Simulator Evaluation Guide 0815001, Revision 25
1-EOP-01, Standard Post Trip Actions
1-EOP-02, Reactor Trip Recovery

Section 1R12: Maintenance Effectiveness

Procedures

NAP-415, Maintenance Rule Program Administration
ADM-17.08, Implementation of 10 CFR 50.65, Maintenance Rule
SCEG-004, Guideline for Maintenance Rule Scoping, Risk Significant Determination, and Expert Panel Activities

Section 1R13: Maintenance Risk Assessments and Emergent Work Control

Procedures

OP-AA-104-1007, Online Aggregate Risk
WCG-016, Online Work Management
ADM-17.16, Implementation of The Configuration Risk Management Program

Section 1R15: Operability Determinations and Functionality

Procedures

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

Section 1R18: Plant Modifications

Procedures

ADM-17.18, Temporary Modifications
ADM-17.11, 10 CFR 50.59 Screening
QI-3-PSL-1, Design Control

Section 1R19: Post Maintenance Testing

Procedures

ADM-78.01, Post Maintenance Testing

Section 1R20: Refueling and Other Outage Activities

Procedures

010526, Outage Risk Assessment and Control
1-GOP-302, Reactor Plant Startup-Mode 3 to Mode 2

Section 1R22: Surveillance Testing

Procedures

ADM-29.01A, Inservice Testing (IST) Program for Pumps and Valves
ADM-29.02, ASME Code Testing of Pumps and Valves

Section 1EP2: Alert and Notification System Evaluation

Procedures and Reports

Federal Emergency Management Agency Approval (FEMA-43 Report) EP-SR-102-1000,
 Nuclear Division Florida Alert and Notification System Guideline Nuclear Fleet, Rev. 7
 Transmission and Substation Siren System Availability Test Procedure No. 06.80.01, Rev. K
 Transmission and Substation Siren Maintenance Procedure No. 06.80.02, Rev. H
 Transmission and Substation Siren Maintenance Procedure No. 06.80.05, Rev. D

Records and Data

2011 St. Lucie Siren System Availability
 2012 St. Lucie Siren System Availability
 2012 Safety Planning Information Mailer

Corrective Action documents

1654328	Siren S-36 battery failure
1663414	Siren S-43 and S-73 AC power failures
1665580	Siren S-8 battery failure
1697767	Siren S-50 failed due to lightning strike
1740170	Siren S-43 power failure
1846395	ANS maintenance procedures require revision

Section 1EP3: Emergency Response Organization Staffing and Augmentation System

Procedures

EPIP-03, Emergency Response Organization Notification/Staff Augmentation, Rev. 20
 EPIP-04, Activation and Operation of the Technical Support Center, Rev. 39
 EPIP-05, Activation and Operation of the Operational Support Center, Rev. 30
 EPIP-06, Activation and Operation of the Emergency Operations Facility, Rev. 34
 EPIP-07, Conduct of Evacuations/Assembly, Rev. 8
 EPIP-12, Maintaining Emergency Preparedness – Radiological Emergency Plan Training St. Lucie Plant, Rev. 28
 EPIP-13, Maintaining Emergency Preparedness – Emergency Exercises, Drills, Tests and Evaluations, Rev. 16
 EPG-05, Maintenance of the Emergency Response Directory, Rev. 4
 EPG-05, Maintenance of the Emergency Recall System, Rev. 4

Records and Data

Current ERO Roster
 ERO Training Records – sample of 13
 St. Lucie Plant Emergency Response Directory, Rev. 68
 2012 after-hours phone tests

Corrective Action documents

1668512	Timely ERO activation timeliness challenges
1712609	Implement actions to improve ERO activation
1845968	Emergency Plan contains inaccurate NRC notification guidance
1846204	EPIP-03 refers to deleted EOF ERO member

Section 1EP5: Maintenance of Emergency Preparedness

Procedures

St. Lucie Plant Radiological Emergency Plan, Rev. 60
 1-EPIP-09, Off-Site Dose Calculations – Unit 1, Rev. 1
 2-EPIP-09, Off-Site Dose Calculations – Unit 2, Rev. 1
 EP-AA-100-1001, Guidelines for Maintaining Emergency Preparedness, Rev. 5
 EP-AA-100-1007, Evaluation of Changes to the Emergency Plan, Supporting Documents and Equipment [10 CFR 50.54(Q)], Rev. 1
 EP-AA-101, Nuclear Division Drill and Exercise Program, Rev. 1
 EP-AA-101-1000, Nuclear Division Drill and Exercise Procedure, Rev. 4
 EP-AA-105, Maintaining Equipment Important to Emergency Preparedness, Rev. 2
 EPG-02, Emergency Response Facility and Equipment Surveillance, Rev. 15
 EPG-03, Review and Revision of Emergency Preparedness Documents, St Lucie Plant, Rev. 15
 EPG-04, Drill and Exercise Program, Rev. 14
 EPIP-06, Activation and Operation of the Emergency Operations Facility, Rev. 33
 EPIP-13, Maintaining Emergency Preparedness – Emergency Exercises, Drills, Tests and Evaluations, Rev. 16
 HP-90, Emergency Equipment, Rev. 53
 PI-AA-101, Self-Assessment and Benchmarking Program, Rev. 10

Records and Data

Self-Assessment: EP Drill and Exercise Trends, 11/18/11
 Self-Assessment: EP Drill Objectives, 11/18/11
 Self-Assessment: EP Drill and Exercise Trends, 12/31/12
 2012 Agreement Letters with local governmental agencies/medical service providers
 Emergency Preparedness Training Drill Reports, July 2011 – July 2012
 10 CFR 50.54(q) Screening No. 1820227, Eliminating ERO position of EOF Nuclear Engineer
 10 CFR 50.54(q) Screening No. 246497, ERDADS Replacement
 10 CFR 50.54(q) Screening No. 249981, Unit 2 Control Room Air Conditioning Unit Upgrade
 EP Rulemaking Assessment: EALs for Hostile Action, 02/15/12
 EP Rulemaking Assessment: Emergency Declaration Timeliness, 02/15/12
 EPG-02, Emergency Response Facility and Equipment Surveillance, EOF/ENC/OSC/TSC Inventory Checklists, 1st Quarter 2011 – 4th Quarter 2012
 EPG-03, Review and Revision of Emergency Preparedness Documents, St. Lucie Plant, Appendix C, 10 CFR 50.54(q) Review Instructions, Attachment 2, 10 CFR 50.54(q) Review Form, Rev. 8, Change ESATCOM to EMnet, Dated 10/19/11
 PSL-11-029, St. Lucie Nuclear Oversight Report – Emergency Preparedness, Dated 08/16/11
 PSL-12-008, St. Lucie Nuclear Oversight Report – Emergency Preparedness, Dated 08/14/12
 QHSA – Assessment of ERO Facility Performance per Objective for 2012, Undated
 Self-Assessment Report: SA 1813153, Preparation of NRC Inspection of EP Program, Undated

Corrective Action documents

1671073 improve guidance for invoking 10CFR50.54x/y
 AR 01669078, EP drill scenario impacts due to simulator performance
 AR 01686008, 09/13/11 E-Drill OSC Critique Roll-Up
 AR 01781828, Drill and Exercise improvement opportunities
 CR 01675333, EP procedure issues related to inventory checklists
 CR 01675346, Emergency Planning facility material - stocking of EP supplies

Section 40A1: Performance Indicator VerificationProcedures

ADM-25.02, NRC Performance Indicators, Rev. 28
 EPG-01, Emergency Preparedness Assessment and Performance Monitoring, Rev. 15
 EPIP-01, Classification of Emergencies, Rev. 21
 EPIP-08, Off-Site Notifications and Protective Action Recommendations, Rev. 30

Records and Data

Documentation of Performance Indicator data from April 1, 2012 through December 31, 2012
 for DEP, ANS, and ERO
 Simulator Evaluation Guide 0815018, Rev. 18

Corrective Action documents

1763199 Incorrect PAR issued
 1690442 EP drill state notification form inaccurate
 1693360 Inaccurate/incomplete drill notification to the state during EP drill
 1767469 Unexpected E-Plan classification during weekly simulator evaluation
 1775883 Graded Exercise 2012 evaluation of the UE declaration
 1775899 Graded Exercise 2012 – SAE PARs not expected
 1785002 Unsat Emergency Plan Classifications during an LOCT exam
 1787250 Unexpected E Plan classification during LOCT exam
 1787253 Missed Emergency Plan classification during an LOCT exam
 1763194 General Emergency classification untimely
 1763199 Incorrect Protective Action Recommendation

Section 40A3: Follow-up of Events and Notices of Enforcement Discretion (71153)Miscellaneous

Root Cause Evaluation, "Rod Control Issues Caused a Reactor Trip and Delayed Unit
 Start-Up by 9 Days", AR 01750764, Rev. 4
 Trip #273, Post Trip Review, dated March 24, 2012
 EC 0000272944, Unit 1 Rod Control, Rev. 5

Action Requests Reviewed During Inspection

AR 01746072, Unit 1 Manual Trip during Low Power Physics Testing
 AR 01750764, Root Cause on Power Supply Ripple

Procedures

1-AOP-66.01, Dropped or Misaligned CEA Abnormal Operations, Rev. 2
1-PMI-66.02, Coil Power Programmer Control Cabinet Auctioneered +15 VDC Power Supply Checks and Replacement, Rev. 2
3200091, Reload Startup Physics Testing, Rev. 30
ADM-78.01, Post Maintenance Testing, Rev. 39
EN-AA-205-1100, Design Change Packages, Rev. 3
OP-AA-100-1000, Conduct of Operations, Rev. 6
OP-AA-103-1000, Reactivity Management, Rev. 0

Completed Testing

WO 40021226-01, FOC Assist Ops During Rx S/U with CEDMS Problem Contingency
WO 40065986-01, EPU EC272944: Rod Control System Upgrade SL1-24

Action Requests Generated as a Result of Inspection

AR 01858250, Misaligned Rods not Recognized During 3/18/12 U/1 Trip

Section 4OA5: Other Activities

Procedures

1-NOP-116.01, Dry Shielded Canister Fuel Loading
0-GMM-116.07, ISFSI TC/DSC Preparation For Loading
0-GMM-116.08, ISFSI TC/DSC Handling Operations For Fuel Loading
0-GMM-116.12, ISFSI Dry Shielded Canister Sealing Operations
0-GMM-116.14, ISFSI DSC Transport From CHF to HSM