



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

October 27, 2011

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
05000335/2011004, 05000389/2011004**

Dear Mr. Nazar:

On September 30, 2011, the US Nuclear Regulatory Commission (NRC) completed an inspection at your St. Lucie Plant Units 1 and 2. The enclosed inspection report documents the inspection results, which were discussed on October 11, 2011, with Mr. Anderson and other members of your staff.

The inspection examined activities conducted under your license as they relate 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.

Based on the results of this inspection, no findings were identified. However, two licensee-identified violations which were determined to be of very low safety significance are listed in this report. The NRC is treating these violations as non-cited violations consistent with the NRC Enforcement Policy because of the very low safety significance of the violations and because they are entered in your corrective action program. If you contest these non-cited violations, 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 Station.

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

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Sincerely,

/RA/

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

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

Enclosure: Inspection Report 05000335/2011004, 05000389/2011004
w/Attachment: Supplemental Information

cc w/encl: (See next page)

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NAME	D. Rich	G. Wilson	M. Donithan	T. Hoeg	R. Reyes	P. Capehart	M. Meeks
DATE	10/27/2011	10/25/2011	10/25/2011	10/26/2011	10/26/2011	10/26/2011	10/26/2011
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Letter to Mano Nazar from Daniel W. Rich dated October 27, 2011

SUBJECT: ST. LUCIE NUCLEAR PLANT - NRC INTEGRATED INSPECTION REPORT
05000335/2011004, 05000389/2011004

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.: 50-335, 50-389

License Nos.: DPR-67, NPF-16

Report No: 05000335/2011004, 05000389/2011004

Licensee: Florida Power & Light Company (FPL)

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

Location: 6351 South Ocean Drive
Jensen Beach, FL 34957

Dates: July 1 to September 30, 2011

Inspectors: T. Hoeg, Senior Resident Inspector
R. Reyes, Resident Inspector
P. Capehart, Senior Operations Engineer
M. Meeks, Operations Engineer

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

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SUMMARY OF FINDINGS

IR 05000335/2011-004, 05000389/2011-004; 07/01/2011-09/30/2011; St. Lucie Nuclear Station Units 1 & 2; Routine Integrated Report.

The report covered a three month period of inspection by resident inspectors and region based inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

A. NRC-Identified and Self-Revealing Findings

No findings were identified.

B. Licensee Identified Violations

Two violations of very low safety significance were identified by the licensee and have been reviewed by the inspectors. Corrective actions taken or planned by the licensee have been entered into their corrective action program. These violations and corrective actions are discussed in Section 4OA7 of this report.

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REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period at full rated thermal power (RTP). On August 22 Unit 1 was manually tripped due to a large influx of jelly fish into the intake canal affecting the circulating water and intake cooling water systems. Unit 1 was restarted on August 26 and returned to full RTP on August 28. Unit 2 began the period at full RTP. On August 22 Unit 2 reactor power was lowered to 70 percent RTP due to a large influx of jelly fish into the intake canal. On August 25 Unit 2 was returned to full RTP.

1. REACTOR SAFETY

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

1R01 Adverse Weather Protection

.1 Hurricane Season Preparations

a. Inspection Scope

The inspectors reviewed and verified the status of licensee actions taken in accordance with their procedural requirements prior to the onset of hurricane season. The inspectors reviewed administrative procedures ADM-04.01, Hurricane Season Preparation. The inspectors performed site walk downs of the below listed systems and/or areas to verify the licensee had made the required preparations. Condition reports (CRs) were checked to assure that the licensee was identifying and resolving weather related issues.

- Unit 1 and Unit 2 component cooling water systems
- Unit 1 and Unit 2 intake cooling water systems
- Unit 1 and Unit 2 auxiliary feed water systems
- Unit 1 and Unit 2 emergency diesel generator systems
- Unit 1 and Unit 2 condensate storage tanks

b. Findings

No findings were identified.

.2 Offsite and Alternate AC Power System Readiness

a. Inspection Scope

The inspectors evaluated the summer readiness of both the offsite and onsite alternate AC power systems for extreme summer weather. The inspectors walked down the Unit 1 and Unit 2 safety-related emergency diesel generators and the

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turbine driven auxiliary feed water pumps to verify they would be available during a loss of offsite power event. The inspectors performed a walk down of the switchyard with plant personnel to verify the material condition of the offsite power sources was adequate. Open work orders (WOs) for the offsite and onsite AC power systems were reviewed to ensure degraded conditions were properly addressed. The inspectors verified that licensee and transmission system operator procedures contained communication protocols addressing the exchange of appropriate information when issues arise that could impact the offsite power system. The inspectors verified that no equipment or operating procedure changes have occurred since the last performance of this inspection that would potentially affect operation or reliability of the offsite or onsite AC power systems. The documents reviewed are listed in the List of Documents Reviewed attachment.

b. Findings

No findings were identified.

.3 Impending Adverse Weather Conditions

a. Inspection Scope

On August 22 thru 24, the inspectors reviewed the overall hurricane preparations made or planned by the licensee for Hurricane Irene. The inspectors verified conditions were established for the onset of high winds and heavy rains including completion of hurricane watch preparations in accordance with licensee procedure 0005753, "Severe Weather Preparations." The inspectors performed a walkdown of the following areas:

- Unit 1 and 2 turbine buildings
- Unit 1 and 2 intake cooling water pump buildings

b. Findings

No findings were identified.

1R04 Equipment Alignment

.1 Partial Equipment Walkdowns

a. Inspection Scope

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

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problems that could cause initiating events or impact the capability of mitigating systems or barriers by entering them into the corrective action program (CAP).

- 2B emergency diesel generator (EDG) while the 2A EDG was out of service (OOS) for testing
- 2B intake/component cooling water header (ICW/CCW) during a yellow online risk configuration while the 2A ICW/CCW header was out of service during testing of a CCW pump
- Unit 2 refueling water tank B suction train while A OOS
- Unit 2, B train of emergency core cooling system (ECCS) during a yellow online risk configuration while the A train of ECCS was OOS

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Fire Area Walkdowns

a. Inspection Scope

The inspectors toured the following five 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 CR database to verify that fire protection problems were being identified and appropriately resolved. The following areas were inspected:

- Unit 1 intake cooling water pump area
- Unit 2 remote shutdown panel room
- Unit 1 HVE-9B emergency core cooling system area fan room
- Unit 2 spent fuel pool area, 62' elevation
- Unit 1 1C auxiliary feed water pump area

b. Findings

No findings were identified.

.2 Fire Protection - Drill Observation

a. Inspection Scope

On August 15th the inspectors observed an unannounced fire drill during backshift hours. The drill took place at the Unit 1 Cold Chemistry Laboratory. The drill was observed to evaluate the readiness of the plant fire brigade to fight fires. The inspectors verified that the licensee staff identified deficiencies, openly discussed them in a self-critical manner at the debrief, 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.

b. Findings

No findings were identified.

1R06 Flood Protection Measures

.1 Internal Flooding

a. Inspection Scope

The inspectors conducted walkdowns of the following areas which included checks of building structure sumps to ensure that flood protection measures were in accordance with design specifications. The inspectors reviewed Updated Final Safety Analysis Report (UFSAR), Section 3.4, Water Level (Flood) Design and UFSAR Table 3.2-1, Design Classification of Systems, Structures, and Components (SSC). 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.

- Unit 1 and Unit 2 emergency core cooling system rooms

b. Findings

No findings were identified.

.2 Internal Underground Manhole Inspections

a. Inspection Scope

The inspectors performed inspections of underground manhole inspections containing safety related cables. The inspectors reviewed licensee procedure ER-AA-106, "Cable Condition Monitoring Program." The inspectors observed portions of manhole inspections performed by the licensee of Unit 2 manholes M226 and M227 containing safety related cabling as described on drawing 2998-G-486, "Handhole Drainage System Drawing." The inspectors verified no presence of water intrusion and that adequate dewatering capabilities were in place related to the manholes. The inspectors looked for signs of cable splicing or damaged support structures and interviewed the responsible licensee personnel performing the inspections.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Training Program

1. Resident Inspector Quarterly Review

a. Inspection Scope

On September 13, 2011, the inspectors observed and assessed licensed operator actions during a simulated security event, rapid down power, small break loss of coolant accident, reactor trip, and loss of a 4kV bus. 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

b. Findings

No findings were identified.

2. Bi-ennial Review by Regional Specialist

a. Inspection Scope

The inspectors reviewed the facility operating history and associated documents in preparation for this inspection. During the week of July 25, 2011, the inspectors reviewed documentation, interviewed licensee personnel, and observed the administration of operating tests associated with the licensee's operator requalification program. Each of the activities performed by the inspectors was done to assess the effectiveness of the facility licensee in implementing requalification requirements identified in 10 CFR Part 55, "Operators' Licenses." The evaluations were also performed to determine if the licensee effectively implemented operator requalification guidelines established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and Inspection Procedure 71111.11, "Licensed Operator Requalification Program." The inspectors also evaluated the licensee's simulation facility for adequacy for use in operator licensing examinations using ANSI/ANS-3.5-1998, "American National Standard for Nuclear Power Plant Simulators for Use in Operator Training and Examination." The inspectors observed two (2) crews during the performance of the operating tests. Documentation reviewed included written examinations, Job Performance Measures (JPMs), simulator scenarios, licensee procedures, on-shift records, simulator modification request records, simulator performance test records, operator feedback records, licensed operator qualification records, remediation plans, watchstanding records, and medical records. The records were inspected using the criteria listed in Inspection Procedure 71111.11. Documents reviewed during the inspection are documented in the List of Documents Reviewed.

b. Findings

No findings were identified.

3. Operating Experience Smart Sample (OpESS) FY 2010-02, "Sample Selections for Reviewing Licensed Operator Examinations and Training Conducted on the Plant Referenced Simulator"

a. Inspection Scope

On September 28, 2011, the inspectors observed and assessed portions of licensed operator actions during a simulated hurricane warning, reactor down power, reactor trip with a loss of offsite power, and a fire in the 2A DC bus room. 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 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

b. Findings

No findings were identified.

1R12 Maintenance Effectiveness

a. Inspection Scope

The inspectors reviewed system performance data and associated CRs for the two systems 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 10CFR50.65, Maintenance Rule. 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 also 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.

- U1 Auxiliary Feedwater System
- U2 Component Cooling Water System

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors completed in-office reviews, plant walk downs, and control room inspections of the licensee's risk assessment of six emergent or planned maintenance activities. The inspectors verified the licensee's risk assessment and risk management activities using the requirements of 10 CFR 50.65(a)(4); the recommendations of Nuclear Management and Resource Council 93-01, Industry

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Guidelines for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants, Revision 3; 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 SSCs listed below:

- Unit 2, 2A CCW pump, 2C ICW pump, and 2C auxiliary feedwater (AFW) pump OOS
- Unit 2, 2A EDG, 2A low and high pressure safety injection pumps, 2A containment spray pump, and the refueling water tank suction to the A train emergency core cooling system OOS
- Unit 1, 1A & 1B instrument air compressors, HVE-9A ECCS room exhaust fan, and 2A EDG OOS
- Unit 2, 2C CCW pump, HVS-5B electrical equipment room ventilation fan, and 2A CCW train OOS
- Unit 2, 2B EDG, 2B low and high pressure safety injection pumps, and 2B containment spray pump, and the containment sump suction to B train ECCS OOS
- Unit 1, B ECCS train OOS during valve stroking, Unit 2, B ECCS train OOS during safeguards testing

b. Findings

No findings were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed the following six condition report (CR) interim dispositions and operability determinations to ensure that operability was properly supported and the affected SSCs remained available to perform its safety function with no increase in risk. The inspectors reviewed the applicable UFSAR, and associated supporting documents and procedures, and interviewed plant personnel to assess the adequacy of the interim disposition.

- AR 01667241, 2B Steam Generator Water Level Controller Failures
- AR 01671352, 2A1 Emergency Diesel Generator DC Lube Oil Pump Failure
- AR 1672077, Unit 1 Feedwater Flow Transmitters Out of Calibration
- AR 1682539, V5202 Pressurizer Steam Sample Valve Inoperable
- AR 0469260, Unit 2 Charging Pumps Safety Injection Actuation Signal
- AR 01689131, Bolt Not Engaged on Unit 1 C Auxiliary Feedwater Valve Limit Switch

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b. Findings

No findings were identified.

1R18 Plant Modificationsa. Inspection Scope

The inspectors reviewed the documentation for the two plant modifications listed below. The inspectors reviewed the 10 CFR 50.59 screenings and evaluations to verify that the modifications had not affected system operability and availability. The inspectors reviewed associated plant drawings and UFSAR documents impacted by the modifications and discussed the changes with licensee personnel to verify that the installations were consistent with the modification documents. The inspectors walked down accessible portions of the modifications to determine if they were installed in the field as described in the associated documents. Additionally, the inspectors verified that any problems associated with modifications were being identified and entered into the CAP.

- Temporary System Alteration TSA 1-10-030, Control Element Assembly (CEA) Number 53 Temporary Recorder Installed
- Engineering Change EC 249702, 1C Auxiliary Feedwater Pump Cover Installation

b. Findings

No findings were identified.

1R19 Post Maintenance Testinga. Inspection Scope

For the six post maintenance tests (PMTs) listed below, the inspectors reviewed the test procedures and either witnessed the testing and/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. The inspectors reviewed the following WOs and/or work requests (WR):

- WO 40099892, Unit 2 Emergency Diesel Generator EDG-2A1 DC Lubrication Oil Pump Maintenance
- WO 40004451, Unit 2 2A Component Cooling Water Pump Maintenance
- WO 94028470, Unit 2 Auxiliary Feedwater System MV-08-13 Valve Switch Maintenance
- WO 40102018, Unit 1 Control Room Air Conditioner HVA/ACC 3B Maintenance

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- WO 40018175, 2B Fuel Oil Transfer System Relief Valve Maintenance
- WO 40073615, 1C Auxiliary Feed Pump Maintenance

b. Findings

No findings were identified.

1R20 Refueling and Other Outage Activities

.1 Unit 1 Forced Outage

a. Inspection Scope

On August 22, 2011, Unit 1 operators performed a rapid down power and manual reactor plant trip when an excessive amount of jelly fish entered the intake canal, causing high differential pressures across the intake cooling water traveling screens, reduced circulating water flows, and lowering condenser vacuum. The inspectors observed control room activities following the reactor plant trip, monitored shutdown activities, and observed the reactor startup including synchronizing the turbine generator to the grid.

Monitoring and Shutdown Activities

The inspectors observed portions of the plant shutdown to hot standby and maintaining hot standby to verify that operating restrictions and procedural requirements were followed. The inspectors observed control room operator communications, place keeping, and reviewed chronological log entries. The inspectors reviewed documentation and operator actions associated with licensee procedures 1-EOP-01, Standard Post Trip Actions, 1-EOP-02, Reactor Trip Recovery, and ADM-0010728, Unit Restart Readiness.

Monitoring of Heat up and Startup Activities

On August 26, 2010, the inspectors observed control room activities during the reactor restart to verify that reactor parameters were within safety limits and that the startup evolutions were performed in accordance with licensee procedure 2-GOP-302, Reactor Startup Mode 3 to Mode 2.

b. Findings

No findings were identified.

1R22 Surveillance Testinga. Inspection Scope

The inspectors either reviewed or witnessed the following six surveillance tests to verify the tests met the technical specification requirements, the final safety analysis report descriptions, licensee's test 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 configuration required for the system to perform its safety function. The tests reviewed included one in-service test (IST) surveillance. The inspectors verified that surveillance issues were documented in the CAP.

- 0-OSP-37.01, Emergency Cooling Water Canal Periodic In-service Test (IST)
- 1-OSP-59.01B, 1B Emergency Diesel Generator (EDG) Monthly Surveillance Test
- 1-OSP-01.03, Reactor Coolant System (RCS) Inventory Balance
- 1-OSP-59.01A, 1A EDG Monthly Surveillance Test
- 2-OSP-09.01C, 2C Auxiliary Feedwater Pump Code Run
- 2-SMI-66.12, CEA Block Circuit Functional Test

b. Findings

No findings were identified.

1EP6 Drill EvaluationEmergency Preparedness Drillsa. Inspection Scope

On July 13, 2011, the inspectors observed licensed operators in the simulator, technical support center staff, and the emergency operations facility staff during a drill of the site emergency response organization. The drill included a steam generator tube leak, a loss of off-site power, followed by a loss of the operating diesel which put the unit in a station black out. Plant conditions degraded to a point where the licensee declared a general area emergency. During the drill the inspectors assessed operator 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 Site Area Emergency and General Emergency classifications and verified 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

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emergency plan; the required TS actions for the drill scenario were reviewed to assess correct implementation; and the licensee-identified critique items were discussed and reviewed to verify that drill weaknesses were identified and captured in the CAP.

On September 13, 2011, the inspectors observed licensed operators in the simulator during a drill of the site emergency response organization. The drill included a simulated security event, rapid down power, small break loss of coolant accident, reactor trip, and loss of a 4kV bus. During the drill the inspectors assessed operator actions to verify that emergency classifications and notifications were made in accordance with licensee emergency plan implementing procedures and 10 CFR 50.72 requirements. The inspectors specifically reviewed the Alert and Site Area Emergency classifications and verified that 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 required TS actions for the drill scenario were reviewed to assess correct implementation; and 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 Verification

Initiating Events and Mitigating Systems Cornerstones

a. Inspection Scope

The inspectors checked licensee submittals for the performance indicators (PIs) listed below for the period July 1, 2010, through June 30, 2011, 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 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

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- Unit 2 Safety System Functional Failures

b. Findings

No findings were identified.

4OA2 Identification and Resolution of Problems

.1 Routine 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 CRs and by reviewing the licensee's electronic CR 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 Follow up of Selected Issues Samples

a. Inspection Scope

The inspectors selected the following three samples to ensure the licensee has planned or implemented corrective actions commensurate with the safety significance of the issues. The inspectors performed a more in-depth review of the circumstances that led up to the condition and the corrective actions that followed.

The inspectors reviewed the licensee's evaluation and interviewed plant personnel. The inspectors evaluated the licensee's administration of the selected samples in accordance with their corrective action program as specified in licensee procedures PI-SL-204, "Condition Identification and Screening Process," and PI-SL-205, "Condition Evaluation and Corrective Actions."

- AR 1671352, 2A1 Emergency Diesel Generator DC Turbocharger Lube Oil Pump Malfunction
- AR 1632513, 2A Emergency Diesel Generator Radiator Fan Bearing Failure
- WO 40076241, TCV-34-3B Letdown Heat Exchanger Temperature Control Valve Operator Work Around

b. Findings

No findings were identified.

4OA3 Event Follow-up.1 Unit 1 Manually Tripped Due to Large Influx of Jelly Fisha. Inspection Scope

On August 22, 2011, Unit 1 operators performed a rapid down power and manual reactor plant trip when excessive jelly fish entered the intake canal, causing high differential pressures across the intake cooling water traveling screens, reduced circulating water flows, and lowering condenser vacuum. The inspector was notified at home of the reactor trip and responded to the plant to assess plant conditions and determine if any complications occurred during the trip and reactor plant shutdown. The inspector toured the Unit 1 and Unit 2 intake structures and observed Unit 1 control room activities following the shutdown to hot standby. The inspector reviewed operating 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 observed control room operator communications, procedure place keeping, and control room annunciator responses by the reactor operators at the control boards. The inspector reviewed documentation and operator actions associated with licensee procedures 1-EOP-01, Standard Post Trip Actions, and 1-EOP-02, Reactor Trip Recovery.

b. Findings

No findings were identified.

.2 (Closed) LER 2011-001-00, Inadvertent Crosstie of Component Cooling Water (CCW) to Control Room Air Conditioning Units

On December 2, 2010, the licensee identified that Unit 2 component cooling water system trains A and B were cross-connected through a control room air conditioning unit with CCW flow being supplied from the A header and returned to the B header. This condition failed to meet the requirement of two independent cooling loops being available per TS 3.7.3 and a condition prohibited by technical specifications. The licensee determined that on November 8, 2010, an equipment clearance order (ECO) was issued which isolated the CCW system from the HVA/ACC-3C air conditioning unit by closing CCW supply valves from the A and B CCW headers and closing a combined CCW return header isolation valve isolating both A and B return paths. Upon restoration, the A CCW supply valve was opened and the combined CCW return header isolation valve opened aligning what the operators thought was to the A CCW header. However, the air conditioning unit had previously been aligned to the B CCW header where it remained after restoring flow through the combined CCW return header isolation valve. The licensee determined the cause of the event to be

Enclosure

an inadequate system restoration procedure following maintenance. Corrective actions included restoration of the CCW system to independent loop alignment and revision to various operations procedures to ensure adequate valve alignments are performed following repositioning of CCW system valves for maintenance.

The inadvertent cross connection of the CCW trains was a violation of Technical Specification 3.7.3. This finding was determined to be greater than minor because it was associated with the Mitigating Systems cornerstone attribute of plant configuration control and affected the cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. The inspectors determined the finding should be evaluated using the SDP in accordance with IMC 0609, "Significance Determination Process," Appendix A, "Determining the Significance of Reactor Inspection Findings for At-Power Situations." The inspectors determined the finding was potentially greater than very low safety significance because, as described in the Mitigation System Cornerstone, the finding screened as potentially risk significant due to a seismic, flooding or severe weather initiating event. Consequently a Phase 3 analysis was required. The analysts determined the cross-connection of both trains of CCW through the control room air conditioning units was of very low risk significance (Green). The enforcement aspects of the violation are discussed in Section 4OA7. This LER is closed.

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) Walkdown (IP 60855.1)

a. Inspection Scope

The inspectors conducted a walk down of the 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 security access controls to the ISFSI area to be functional.

b. Findings

No findings were identified.

.3 Review of Institute of Nuclear Power Operations (INPO) Interim Evaluation Report

The inspectors reviewed the INPO interim evaluation report for an evaluation performed during the weeks of June 20 and June 27, 2011, while the units operated at full power.

40A6 Meetings

Exit Meeting Summary

Resident Inspection

The resident inspectors presented the inspection results to Mr. Anderson and other members of licensee management on October 11, 2011. 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.

An exit meeting for the Biennial Licensed Operator Requalification Training Review by Regional Specialist was conducted on July 29, 2011, to discuss the findings of this inspection. The inspectors confirmed that no proprietary information was reviewed during this inspection.

40A7 Licensee Identified Violations

The following violations of very low safety significance (Green) or Severity Level IV were identified by the licensee and are violations of NRC requirements which meet the criteria of the NRC Enforcement Policy for being dispositioned as Non-Cited Violations:

- Unit 2 TS 6.8.1 requires, in part, that written procedures be established, implemented, and maintained as recommended in Regulatory Guide 1.33, Quality Assurance Program Requirements. Regulatory Guide 1.33 states, in part, that maintenance procedures for safety related equipment should provide proper instructions appropriate for the circumstances. Contrary to this, emergency diesel generator maintenance procedure 2-MMP-59.03 did not provide adequate vendor recommended maintenance instructions for radiator fan bearing lubrication. As a result, the fan bearings were not properly lubricated, causing one bearing to seize during operation due to overheating. Immediate corrective actions taken upon discovery included repair of the affected bearing assembly, an extent of condition review, and adding additional grease to the other affected fan bearings on Unit 1 and Unit 2 and performing satisfactory post maintenance tests. This event was documented in CR 1632513. The finding was of very low safety significance because overall reactor plant mitigation capability remained intact while in Mode 5 and shutdown with the 2B EDG remaining operable.
- Unit 1 TS 3.7.3 requires, in part, that at least two independent CCW loops be operable in Modes 1, 2, 3, and 4. Contrary to this, on December 2, 2010, the licensee discovered the A and B CCW headers cross-tied thru a control room air conditioning unit, rendering the loops as not being independent. Immediate corrective actions taken upon discovery included returning the system valve lineup configuration to normal. This event was documented in CR 598902. The Region II senior risk analyst determined the finding was of very low risk significance as described in Section 4OA3.3.

ATTACHMENT: SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

R. Anderson, Site Vice President
D. Calabrese, Emergency Preparedness Manager
D. Cecchett, Licensing Engineer
J. Hamm, Engineering Manager
B. Hughes, Plant General Manager
M. Haskin, Maintenance Manager
M. Hicks, Backlog Reduction Director
S. Duston, Training Manager
K. Frehafer, Licensing Engineer
J. Heinold, Chemistry Technical Supervisor
D. Deboer , Operations Manager
D. Huey, Work Control Manager
T. Horton, Assistant Operations Manger
J. Kramer, Site Safety Manager
R. McDaniel, Fire Protection Supervisor
C. Martin, Radiation Protection Manager
M. Moore, Performance Improvement Department Manager
J. Owens, Performance Improvement Manager
M. Snyder, Site Quality Assurance Manager
G. Swider, Systems and Component Engineering Manager
T. Young, Security Manager

NRC personnel

D. Rich, Chief, Branch 3, Division of Reactor Projects
G. Wilson, Senior Project Engineer, Division of Reactor Projects
J. Hanna, Senior Risk Analyst, Division of Reactor Safety

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Opened

NONE

Opened and Closed

NONE

Closed

05000389/2011-001-00 LER Inadvertent Crosstie of Component Cooling Water to Control Room Air Conditioning Units (Section 4OA3.3)

Attachment

Discussed

NONE

LIST OF DOCUMENTS REVIEWEDRecords

Approximately two years of Simulator Discrepancy Reports (DR) and Simulator Work Orders (SWO)

Licensed Operator medical records (20)

AR 00402090, 2010-3596, SELF ASSESSMENT REPORT: PROPER USE OF SIMULATOR DEFICIENCY REPORTING SYSTEM, dated 12/28/2010

AR 01672941, HYDRAZINE FLOW RATE < TS REQUIRED IN THE SIMULATOR, dated 7/29/2011 (Generated during the inspection week)

AR 01673050, EVALUATE PROCEDURE CHANGE TO EOP-99 APPENDIX D, dated 7/29/2011 (Generated during the inspection week)

AR 01672953, EVALUATE THE 100KW (50AMP) RATIO IN EDG PROCEDURE, dated 7/29/2011 (Generated during the inspection week)

License Reactivation Packages (5)

Remedial Training Records (5)

Watchstanding Records (5)

Training Feedback Summaries

Written Examinations

LOCT Biennial Written Exam, 0820106R-Rrev1, 04/11/2011

LOCT Biennial Written Exam, 0820106R-S, 04/11/2011

Job Performance Measures (JPM)

PSL OPS 0821100, rev 12: RESPOND TO REACTOR SUPPORT COOLING OFF NORMAL - UNIT 1

PSL OPS 0821099, rev 16: PERFORM RCO "A" ACTIONS PER CRI ONP, APPENDIX A - UNIT 1

PSL OPS 0821093, rev 20: ALIGN THE 1C ICW PUMP TO THE 1A ICW HEADER - UNIT 1

PSL OPS 0821015A, rev 11: VERIFY MSIS - UNIT 1

PSL OPS 0821075A, rev 08: MANUALLY ACTUATE AFAS - UNIT 1

PSL OPS 0821014A, rev 11: VERIFY CSAS - UNIT 2

PSL OPS 0821118, rev 14: RESTORE POWER TO 2B3 4.16KV BUS FROM OFFSITE - UNIT 2

Procedures

SEI-01, SIMULATOR FIDELITY AND PERFORMANCE STANDARD, rev 3, dated 07/31/2010

SEI-02, SIMULATOR COMPUTER SOFTWARE CONTROL, rev 6, dated 07/31/2010

SEI-07, SIMULATOR OPERABILITY TESTING AND EVALUATION, rev 5, dated 05/07/2008

SEI-09, SIMULATOR CONFIGURATION CONTROL, rev 7, dated 07/31/2010

TG-004, EXAMINATION DEVELOPMENT, ADMINISTRATIVE AND CONTROL, rev 27, dated 03/24/2011

Attachment

TG-006, SYSTEMATIC TRAINING DEVELOPMENT, rev 25, dated 04/07/2011
 TG-022, SECURITY PROVISIONS FOR LICENSED OPERATOR EXAMINATIONS, rev 1,
 dated 10/20/2010
 TG-023, SIMULATOR SCENARIO BASED TESTING, rev 7, dated 03/28/2011
 TG-024, CONDUCT OF SIMULATOR TRAINING, rev 12, dated 4/10/2011
 0005720, LICENSED OPERATOR CONTINUING TRAINING PROGRAM, rev 62, dated
 04/07/2011
 ADM-18.10, SIMULATOR CONFIGURATION CONTROL, rev 4, dated 07/10/2010

Simulator Scenarios

LOCT Simulator Evaluation Guide 0815008 rev 16 dated 07/08/2011: LOSS OF OFFSITE
 POWER, SMALL BREAK LOCA
 LOCT Simulator Evaluation Guide 0815010 rev 19 dated 07/08/2011: SGTL, FEEDWATER
 PROBLEMS, SGTR
 LOCT Simulator Evaluation Guide 0815015 rev 12 dated 07/08/2011: LOOP, PARTIAL
 STUCK OPEN PORV, AND RECOVERABLE LOSS OF FEED WATER
 LOCT Simulator Evaluation Guide 0815021 rev 12 dated 07/08/2011: ESDE OUTSIDE
 CONTAINMENT WITH SMALL BREAK LOCA
 LOCT Simulator Evaluation Guide 0815048 rev 02a dated 07/08/2011: STATION
 BLACKOUT, RECOVERABLE

Simulator Scenario Based Testing (SBT)

SBT for 0815008 rev 16 dated 06/28/2011: LOSS OF OFFSITE POWER, SMALL BREAK
 LOCA
 SBT for 0815010 rev 19 dated 06/28/2011: SGTL, FEEDWATER PROBLEMS, SGTR
 SBT for 0815015 rev 12 dated 06/23/2011: LOOP, PARTIAL STUCK OPEN PORV, AND
 RECOVERABLE LOSS OF FEED WATER
 SBT for 0815021 rev 12 dated 06/22/2011: ESDE OUTSIDE CONTAINMENT WITH SMALL
 BREAK LOCA
 SBT for 0815048 rev 02a dated 05/12/2011: STATION BLACKOUT, RECOVERABLE

Simulator Transient Tests

TRN-004 Loss of All RCPs From Full Power, rev 7, dated 07/09/2007 (review of test results
 from 2007, 2008, 2009, and 2010)
 TRN-006 Turbine Trip From <15% Power (No RX Trip), rev 9, dated 07/09/2007 (review of
 test results from 2007, 2008, 2009, and 2010)
 RN-009 Double-Ended Main Steam Line Break Inside Containment, rev 8, dated 07/09/2007
 (review of test results from 2007, 2008, 2009, and 2010)

Other Documents

Nuclear Policy Procedure NP-910, Plant Readiness for Operations
 St. Lucie Nuclear Oversight Report PSL-09-064, Fire Protection Audit
 St. Lucie Daily Quality Summaries
 Health Physics Procedure HPP-4, Scheduling of Health Physics Activities
 Operations Department Policy OPS-119, Standing Orders/Night Orders
 St. Lucie Radiation Protection Department Night Order, 2009-023
 MA-AA-101-1000, Foreign Material Exclusion Procedure

Condition Reports

1683767	1686474	1690870	1690200	1690528
1675167	1677564	1686845	1686650	1689616
1673839	1674089	1678589	1678263	1681578
1673739	1671727	1678316	1676740	1677242
1671703	1671610	1676429	1672466	1672077
1671536	1671122	1674091	1671926	1671969
1670470	1670822	1672098	1671906	1671544
1668773	1669755	1671745	1671765	1670288
1667838	1666947	1671607	1671593	1668751
1636642	1628950	1669547	1669660	1660793
575519	476485	534151	1651416	

System Health Reports

Unit 1 and Unit 2 Component Cooling Water System (4/1/2011–6/30/2011)

Unit 1 and Unit 2 Intake Cooling Water System (4/1/2011–6/30/2011)

Unit 1 and Unit 2 Condensate System (4/1/2011–6/30/2011)

Unit 1 and Unit 2 Switch Yard (4/1/2011–6/30/2011)

Unit 1 System Health Report for the Auxiliary Feedwater System (4/1/2011–6/30/2011)

1R01 Adverse Weather Protection

OP-AA-102-1002, Seasonal Readiness

0-AOP-53.02, Low Switchyard Voltage

ADM-16.01, PSL Switchyard Access / Work Control

ADM-17.16, Implementation of the Configuration Risk Management Program

2-NOP-21.15, Intake Intrusion Monitoring and Mitigation

1R05 Fire Protection

ADM-0005728, Fire Protection Training, Qualification And Requalification

ADM-1800022, Fire Protection Plan

AP-2-1800023, Unit 2 Fire Fighting Strategies

1R12 Maintenance Effectiveness

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 Significance Determination, and Expert Panel Activities

Unit 1 System Health Report for the Auxiliary Feedwater System

Unit 2 System Health Report for the Component Cooling Water System

1R13 Maintenance Risk Assessments and Emergent Work Control

OP-AA-104-1007, Online Aggregate Risk

WCG-016, Online Work Management

1R19 Post Maintenance Testing

WCG-013, Operations Control Center Daily Guideline
 WM-AA-200, Work Management Process Overview
 ADM-78.01, Post Maintenance Testing

1R20 Refueling and Other Outage Activities

1-EOP-01, Standard Post Trip Actions
 1-EOP-02, Reactor Trip Recovery
 ADM-0010728, Unit Restart Readiness

1R22 Surveillance Testing

OP-1250020, Valve Breaker, Motor and Instrument Instructions
 ADM-29.02, ASME Code Testing of Pumps and Valves

LIST OF ACRONYMS

ASME	American Society of Mechanical Engineers
CAP	Corrective Action Program
CCW	Component Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
ECCS	Emergency Core Cooling System
IP	Inspection Procedure
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
UFSAR	Updated Final Safety Analysis Report
WO	Work Order
CRDM	Control Rod Drive Mechanism
TS	Technical Specifications
IST	Inservice Testing
NAP	Nuclear Administrative Procedure
ROP	Reactor Oversight Process