

# Saint Lucie 1

## 2Q/2012 Plant Inspection Findings

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### Initiating Events

**Significance:**  Apr 20, 2012

Identified By: NRC

Item Type: FIN Finding

#### **Failure to perform preventive maintenance on the 1B condensate pump discharge check valve**

An NRC identified finding was identified for the licensee's failure to perform a preventive maintenance (PM) activity within its prescribed frequency on the 1B condensate pump discharge check valve. Consequently, the valve failed after a reactor trip and caused complications. No violations of NRC requirements were identified because the condensate pump discharge valve is non-safety related. The licensee entered this issue in the corrective action program as condition report 1755189. Corrective actions included revising the preventive maintenance procedure to initiate a condition report and require plant management approval prior to rescheduling a late PM.

The finding was more than minor because it affected the equipment reliability attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using NRC manual Chapter 0609.04, Significant Determination Process – Phase 1 screening, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The finding involved the cross-cutting area of Human Performance with a work control aspect. Specifically, the licensee did not plan work activities to support long-term equipment reliability, and maintenance scheduling was more reactive than preventive. [H.3(b)] (Section 4OA2.a(3)(i))

Inspection Report# : [2012007](#) (*pdf*)

**Significance:**  Apr 20, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to implement timely corrective actions resulted in a plant trip**

A self-revealing finding was identified for the licensee's failure to implement timely corrective actions. Specifically, after the overheating and failure of a Circulating Water Pump (CWP) motor resulted in an unplanned reactor down power, the licensee failed to implement timely corrective actions to monitor and trend motor stator temperatures using the installed RTDs. Consequently, a second CWP motor failed due to overheating that resulted in a reactor trip. No violations of NRC requirements were identified because the performance deficiency involved non-safety related equipment. The licensee entered this issue in the corrective action program as condition report 1697977. Corrective actions included immediately taking the motor stator RTD temperatures on both Units and using that data to monitor the CWP motors thermal performance for degradation.

The finding was more than minor because it affected the equipment reliability attribute of the Initiating Events Cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using NRC manual Chapter 0609.04, SDP – Phase 1 screening, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The finding involved the cross-cutting area of Problem Identification and Resolution with a corrective action program aspect. Specifically, the licensee did not take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance and complexity. [P.1(d)] (Section 4OA2.a(3)(iii))

Inspection Report# : [2012007](#) (*pdf*)

**G****Significance:** Apr 20, 2012

Identified By: Self-Revealing

Item Type: FIN Finding

**Failure to Implement Vendor Described Preventive Maintenance on the Circulating Water Pump Motors**

A self-revealing finding was identified for the licensee's failure to implement vendor recommended preventive maintenance requirements to monitor and trend motor stator temperatures using the installed resistance temperature detector (RTDs) for the 1A2 Circulating Water Pump (CWP) motor. As a result of not trending 1A2 CWP motor performance, the pump was allowed to run to failure causing an unplanned reactor power transient. No violation of NRC regulatory requirements occurred. The inspectors determined that the finding did not represent a noncompliance because the performance deficiency involved non-safety related equipment. The licensee entered this issue in the corrective action program as condition report 1758355. Corrective actions included revising the circulating pump motor preventive maintenance procedure to include periodic monitoring and trending circulating water pump motor thermal performance using the installed stator Resistance Temperature Detectors (RTDs).

The finding was more than minor because it affected the equipment reliability attribute of the Initiating Events cornerstone and affected the cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown as well as power operations. Using NRC Manual Chapter 0609.04, SDP – Phase 1 screening, the finding was determined to be of very low safety significance (Green) because it was a transient initiator, but did not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. The finding did not have a cross-cutting aspect because the performance deficiency was not indicative of current plant performance. (Section 40A2.b(3)(ii))

Inspection Report# : [2012007](#) (pdf)

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## Mitigating Systems

**G****Significance:** Apr 20, 2012

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

**Failure to implement vendor technical manual recommendations to inspect EDG immersion heaters**

A self-revealing potentially greater than Green AV of Technical Specification 6.8.1.a was identified for failure to establish adequate maintenance procedures associated with the emergency diesel generator (EDG) system. Specifically, station personnel failed to establish preventative maintenance inspections of diesel immersion heaters in accordance with vendor manual recommendations. As a result, the Unit 1 1A EDG was immediately rendered inoperable for 43.5 hours due to a failed immersion heater that resulted in a leak of the 1A2 EDG jacket water system. The licensee replaced the heater with an onsite spare. The finding was considered more than minor because it impacted the Reactor Safety Mitigating Systems Cornerstone objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences and affected the cornerstone attribute of equipment performance. The issue was placed in the licensee's corrective action program as condition report 1751214.

The cause of this finding was related to the Work Control component of the Human Performance cross-cutting area due to the failure to plan work activities to ensure long term equipment availability. Specifically, maintenance scheduling was more reactive than preventative. [H.3(b)] (Section 40A2.b(3)(i))

A self-revealing non-cited violation (NCV) of Technical Specification 6.8.1.a was identified for failure to establish adequate maintenance procedures associated with the EDG system. Specifically, station personnel failed to establish preventative maintenance inspections of diesel immersion heaters in accordance with vendor manual recommendations. As a result, the Unit 1 1A EDG was immediately rendered inoperable for 43.5 hours due to a failed immersion heater that resulted in a leak of the 1A2 EDG jacket water system.

The failure to conduct inspections of the EDG jacket water immersion heaters in accordance with vendor manual recommendations is a performance deficiency. The finding was considered to be more than minor because it impacted the reactor safety Mitigating Systems cornerstone objective to ensure the availability, reliability, and capability of

systems that respond to initiating events. Specifically, the failed immersion heater resulted in a loss of jacket water that caused the 1A EDG to trip during a routine surveillance run. The inspectors performed a Phase 1 evaluation per Inspection Manual Chapter (MC) 0609, Attachment 4 and determined that the finding represented an actual loss of safety function for a single train of equipment, potentially for greater-than its technical specification allowed outage time. Consequently a Phase 2 analysis was performed by the inspectors in accordance with MC 0609, Appendix A, which indicated the risk significance of the performance deficiency was potentially > 1E-6 (White). A Senior Reactor Analyst subsequently performed a Phase 3 analysis of the risk impact both while at-power and while the unit was shutdown. The analyst determined that the risk significance of the issue was very low (Green). The primary cause of the performance deficiency, as determined by the inspectors, was failure to implement vendor recommendations to periodically inspect the immersion heaters. The inspectors determined that the cause of this finding was related to the Work Control component of the Human Performance cross-cutting area due to the failure to plan work activities to ensure the long term equipment availability [H.3(b)]. (Section 4OA5.2)

Inspection Report# : [2012003](#) (*pdf*)

Inspection Report# : [2012007](#) (*pdf*)

**Significance:**  Dec 31, 2011

Identified By: NRC

Item Type: NCV NonCited Violation

### **Failure to Follow Operability Determination Procedure for Evaluation of Past Operability**

The inspectors identified a NCV of Technical Specification (TS) 6.8.1 and Regulatory Guide (RG) 1.33 for the licensee failing to implement a written procedure for operability determinations. Safety related procedure EN-AA-203-1001, "Operability Determinations and Functionality Assessments," was not fully implemented as written on multiple occasions when the 1A and 2A auxiliary feed water pump discharge pressure gauges used for periodic in-service surveillance testing were found out of calibration during periodic maintenance. Specifically, during the performance of maintenance procedure 1400064P, "Installed Plant Instrumentation Calibration," pressure gauge PI-09-7A was found out of calibration, required adjustment, and a condition report written for evaluation in the licensee's corrective action program. The inspector determined a performance deficiency existed when on three separate occasions from 2009 thru 2011, the senior reactor operator concluded incorrectly that the out of calibration gauge conditions did not affect past operability and therefore no engineering evaluation was performed as required by procedure EN-AA-203-1001.

The finding was more than minor because if the performance deficiency is not corrected then it could lead to a more significant safety concern. Using the NRC Manual Chapter 0609, ASignificance Determination Process, @ Table 4A, "Characterization Worksheet," the finding does not represent an actual loss of safety function or screen as potentially risk significant due to seismic, flooding, or severe weather. A contributing cause of the finding is related to the cross-cutting area of Problem Identification and Resolution, with a corrective action program aspect. Specifically, the operator failed to thoroughly evaluate the condition for past operability of the affected auxiliary feed water pump.

Inspection Report# : [2011005](#) (*pdf*)

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## **Barrier Integrity**

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## **Emergency Preparedness**

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## **Occupational Radiation Safety**

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## Public Radiation Safety

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### Security

Although the Security Cornerstone is included in the Reactor Oversight Process assessment program, the Commission has decided that specific information related to findings and performance indicators pertaining to the Security Cornerstone will not be publicly available to ensure that security information is not provided to a possible adversary. Other than the fact that a finding or performance indicator is Green or Greater-Than-Green, security related information will not be displayed on the public web page. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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### Miscellaneous

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