

# Saint Lucie 1

## 3Q/2007 Plant Inspection Findings

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### Initiating Events

**Significance:**  Mar 31, 2007

Identified By: Self-Revealing

Item Type: FIN Finding

#### **Failure to Implement Atmospheric Dump Valve Maintenance Procedure**

A self-revealing finding was identified following an event when Unit 1 inadvertently entered Operational Mode 3 (Hot Standby) due to a failure of the 1A air operated atmospheric dump valve (HCV-08-2A) actuator diaphragm and subsequent plant heat up. It was determined that inadequate maintenance instructions resulted in damage to the actuator diaphragm. The licensee documented this issue in condition report (CR) 05-28232 with corrective actions to develop a written maintenance procedure to perform future actuator maintenance in accordance with component technical manual requirements.

This finding is greater than minor because it affected the equipment reliability attribute of the Initiating Events Cornerstone objective to limit the likelihood of those events that upset plant stability and challenge critical safety functions while the plant is shutdown. The finding was determined to be of very low safety significance because it only affected the Initiating Events Cornerstone and does not contribute to both the likelihood of a reactor trip and the likelihood that mitigation equipment or functions will not be available. A contributing cause of the finding is related to the cross cutting area of Human Performance specifically Resources, because the licensee did not have a complete and accurate work package to perform this maintenance activity. (Section 40A3.1)

Inspection Report# : [2007002](#) (*pdf*)

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### Mitigating Systems

**Significance:**  Sep 28, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Inadequate Procedure for Verification of ICW Operability**

The team identified a violation of 10 CFR 50, Appendix B, Criterion V, Instructions, Procedures, and Drawings, for an inadequate procedure used to verify operability of the Intake Cooling Water (ICW) system when high ocean temperatures occur.

The finding was more than minor because it affected the procedure quality attribute associated with the mitigating systems cornerstone as related to the reliability, availability, and capability of the ICW system to perform the intended safety function during high ocean temperatures. The finding was of very low safety significance (Green) because it was a design deficiency determined not to have resulted in the loss of safety function. No cross cutting aspect was identified for this finding. The licensee entered this deficiency into their corrective action program. (Section 1R21.2.2)

Inspection Report# : [2007006](#) (*pdf*)

**Significance:**  Sep 28, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

#### **Failure to Use the Most Limiting Design Inputs in Engineering Analyses - Several Examples**

The team identified a violation of 10 CFR 50, Appendix B, Criterion III, Design Control, for failure to use the most

limiting design inputs in engineering analyses. Several examples were identified.

The finding was more than minor because if uncorrected it would become a more significant safety concern. The finding was of very low safety significance (Green) because it was a design deficiency determined not to have resulted in the loss of safety function. No cross cutting aspect was identified for this finding. The licensee entered this deficiency into their corrective action program. (Section 1R21.2.6)

Inspection Report# : [2007006](#) (*pdf*)

**Significance:**  Sep 28, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Inadequate Corrective Action Associated with Degraded Performance of the CCW Heat Exchanger Temperature Control Valve (2-TCV 14-4A)**

The team identified a violation of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for inadequate corrective actions associated with the degraded performance of the Component Cooling Water (CCW) heat exchanger temperature control valve (2-TCV-14-4A).

The finding was more than minor because it affected the equipment performance attribute associated with the mitigating systems cornerstone as related to the reliability, availability and capability of the ICW system. The finding was of very low significance (Green) because there was no loss of system safety function. Analysis performed by the licensee during the inspection determined that at the failed valve position the ICW system was capable of removing the design base accident heat load. This finding has a cross cutting aspect in the area of Problem Identification and Resolution, specifically Corrective Action Program, because the licensee failed to take appropriate corrective actions to address safety issues and adverse trends in a timely manner, commensurate with their safety significance (MC 0305 aspect P.1(d)). The licensee entered this deficiency into their corrective action program. (Section 1R21.2.7)

Inspection Report# : [2007006](#) (*pdf*)

**Significance:**  Jun 30, 2007

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Take Timely Corrective Actions for Ensuring Proper Oil Levels in Safety-Related Pump Motors**

The inspectors identified a NCV of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," for failure to take timely and effective corrective actions to prevent recurrence of continued NRC-identified low oil levels in emergency core cooling system (ECCS) pump motors. The licensee entered the finding in their corrective action program for resolution as condition report 2007-5932.

The finding is greater than minor in accordance with IMC 0612, Power Reactor Inspection Reports, "Appendix B, Issue Screening." Specifically, if this condition is left uncorrected, it would become a more significant safety concern because operations and maintenance personnel would not be aware of the vendor required oil levels for the various safety-related pumps and motors which could become out of specification and not noticed or remedied by the licensee. The finding was determined to be of very low safety significance because it did not represent an actual malfunction or inoperability of a safety-related pump or motor. This finding was related to the corrective action aspect of the problem identification and resolution cross-cutting area in the aspect of appropriate and timely corrective actions (MC 0305 aspect P. 1(d)).

Inspection Report# : [2007003](#) (*pdf*)

**Significance:**  Oct 20, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Test the Sound Powered Phones in Accordance With Surveillance Procedures**

The team identified a non-cited violation of Unit 1 Operating License Condition 3.E for failure to perform tests on the sound powered phone system credited for post-fire safe shutdown in accordance with the approved Unit 1 fire

protection program (FPP). The Unit 1 FPP (described in the Updated Final Safety Analysis Report, Appendix 9.5A) listed communications (which includes the sound powered phone system) as being subject to periodic inspections and/or testing. The annual surveillance test procedure for the sound powered phones, OP-1-0010125A, Schedule of Periodic Tests, Checks, and Calibrations, had not been performed since July 2004.

The finding is more than minor because, when the licensee initially performed the missed surveillance test, some of the sound powered phones did not work. This finding affects the ability of the licensee to maintain the communications system and is associated with the mitigating systems cornerstone and its respective attribute of protection against external factors (i.e., fire). The team determined that this finding was of very low safety significance (Green) because other communications systems (i.e., radios) credited in the FPP were verified to be available. The licensee initiated Condition Report (CR) 2006-28784 to address the issue of the missed surveillance test and CR 2006-29158 to address the deficiencies identified during the initial retest of the missed surveillance. The surveillance test was successfully performed during the inspection. (Section 1R05.08)

Inspection Report# : [2006010](#) (*pdf*)

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## Barrier Integrity

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## Emergency Preparedness

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## Occupational Radiation Safety

**Significance:**  Dec 31, 2006

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

### Failure to Survey Unit 1 Control Room Outside Intake Air

. A self-revealing non-cited violation (NCV) of 10 CFR 20.1501(a) was identified for failure to conduct radiation surveys of the Unit 1 (U1) control room ventilation outside intake air. From March 31, 2006 to October 28, 2006, the 'B' U1 Control Room Outside Air Intake (CROAI) monitor sample pump was valved out of the monitor sample path due to a failed breaker. This monitor functions to survey the air supplied to the U1 control room for airborne radioactive contamination, and realigns the control room ventilation to a recirculating mode in the event of a high radiation alarm. This issue was entered into the licensee's corrective action program.

The finding is greater than minor because it is associated with the Occupational Radiation Safety Cornerstone attribute of Plant Facilities/Equipment and Instrumentation and it affected the cornerstone objective, in that not surveying control room air could result in increased operator exposure during accidents. Using the Occupational Radiation Safety Significance Determination Process (SDP), the inspectors determined that the finding was of very low safety significance (Green) because it did not involve a substantial potential for overexposure. Specifically, the U1 CROAI monitors and their automatic ventilation realignment function were not necessary to meet General Design Criteria (GDC) 19 for control room personnel doses as specified in Appendix A to 10 CFR Part 50 during accident conditions, and other operational radiation monitors remained available to provide an automatic actuation signal for the U1 ventilation system realignment.

Inspection Report# : [2006005](#) (*pdf*)

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## Public Radiation Safety

**G****Significance:** Dec 31, 2006

Identified By: NRC

Item Type: NCV NonCited Violation

**Failure to Calculate Accurate Airborne Effluent Doses to Members of the Public**

The inspectors identified a NCV of 10 CFR 20.1302(b) for failure to perform accurate calculations of airborne effluent releases to demonstrate that the maximally exposed individual did not exceed the annual dose limit. Specifically, during the period of March 17, 2004 to October 4, 2006, the flow rate of the Unit 2 Fuel Handling Building (U2 FHB) exhaust fans exceeded that used to calculate the effluent release rate, resulting in a non-conservative dose calculation assessment for members of the public. This finding was entered into the licensee's corrective action program.

This finding is greater than minor because it is associated with the Public Radiation Safety Cornerstone attribute of Program and Process and affected the cornerstone objective of assuring adequate protection of public health and safety from exposure to radioactive materials released into the public domain as a result of routine civilian nuclear reactor operation. The finding was evaluated using the Public Radiation Safety SDP and was determined to be of very low safety significance (Green) because it did not prevent the licensee from assessing doses, and offsite doses from gaseous effluents during the time period in question did not exceed Appendix I to 10 CFR Part 50 criteria. This finding has a cross-cutting aspect in the area of human performance because the procedure used to calculate the effluent activity released did not contain accurate and up-to-date information regarding the U2 FHB ventilation flow rates, resulting in inaccurate calculation of effluent releases. (Section 2PS1)

Inspection Report# : [2006005](#) (*pdf*)

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## Physical Protection

Although the NRC is actively overseeing the Security cornerstone, the Commission has decided that certain findings pertaining to security cornerstone will not be publicly available to ensure that potentially useful information is not provided to a possible adversary. Therefore, the [cover letters](#) to security inspection reports may be viewed.

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## Miscellaneous

**Significance:** N/A Aug 25, 2006

Identified By: NRC

Item Type: FIN Finding

**Identification and Resolution of Problems**

The inspectors identified that the licensee was effective at identifying problems and entering them into the corrective action program. The licensee's effectiveness at problem identification was evidenced by the relatively few deficiencies identified by external organizations (including the NRC) that had not been previously identified by the licensee, during the review period. The licensee effectively used risk in prioritizing the extent to which individual problems would be evaluated and in establishing schedules for implementing corrective actions. Corrective actions, when specified, were generally implemented in a timely manner. Operating experience usage was also found to be effective. Self assessment results adequately identified problems. The inspectors identified a number of weaknesses that are detailed in the report in various aspects within the corrective action process.

On the basis of the samples selected for review, the inspectors concluded that, 1) in general problems were properly identified, evaluated, and corrected within your problem identification and resolution program, 2) the processes and procedures of your corrective action program were generally effective; thresholds for identifying issues were appropriately low, and in most cases, corrective actions were adequate to address conditions adverse to quality, and 3) on the basis of interviews conducted during this inspection, workers at the site felt free to input safety findings into the

corrective action program.

Inspection Report# : [2006008](#) (*pdf*)

**Significance:** N/A Jan 14, 2005

Identified By: NRC

Item Type: FIN Finding

**Special Inspection's Findings and Observations Related with Breaker Failures**

- After two safety-related 4160 volt circuit breakers failed to close, the licensee developed and performed sufficient tests to verify the ability of the remaining safety-related 4160 volt circuit breakers to operate.
- While the initial operability tests ensured that a breaker would cycle once, the licensee did not take into consideration breakers that must operate multiple times in performing various design functions. As a result, for any breaker cycled after passing an initial voltage verification test, but before operability was confirmed by a smooth operation check of the spring charging motor limit switch bracket, the licensee did not have reasonable assurance that the breaker would perform its safety function until a second successful voltage verification test was completed.
- The licensee's root cause evaluation was sufficient to identify the cause of the breaker failures associated with the 1A and 1C Component Cooling Water Pump Breakers. However, it did not examine the following potential programmatic or organizational causes of the breaker failures: inadequate receipt inspection for the 1A Component Cooling Water Pump Breaker evidenced by the failure to identify the bent limit switch bracket; failure to refurbish the 1C Component Cooling Water Pump Breaker within the time frame identified in the maintenance program, or to identify the technical basis for extending the refurbishment cycle by 25%; and failure of the preventive maintenance procedure to identify the degraded performance of the 1C Component Cooling Water Pump Breaker.
- The licensee did not fully implement industry related operating experience in two areas; post-refurbishment receipt inspection of the Westinghouse DHP 4160 volt breakers and effects of hardened grease on 4160 volt breaker operation.

Inspection Report# : [2004011](#) (*pdf*)

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