

Saint Lucie 1

1Q/2009 Plant Inspection Findings

Initiating Events

Significance:  Dec 31, 2008

Identified By: Self-Revealing

Item Type: NCV NonCited Violation

Unit 1 Loss of Shutdown Cooling

A self-revealing Non-Cited Violation (NCV) of 10 CFR Part 50, Appendix B, Criterion V, "Instructions, Procedures, and Drawings," was identified when a reactor operator (RO) failed to comply with a system surveillance procedure while restoring the 1A Low Pressure Safety Injection Pump from its minimum flow test resulting in a loss of shutdown cooling during a refueling operation on October 22, 2008. The licensee provided remedial training to those operators involved and entered the event in their corrective action program (CAP) as condition report (CR) 2008-32977.

This finding is more than minor because it is associated with the configuration control and human performance attributes of the initiating events cornerstone and adversely impacted the cornerstone objective of limiting the likelihood of those events that upset plant stability and challenge critical safety functions during shutdown operations. In addition, if left uncorrected, this finding would result in a more significant safety concern. At the time of the event, the unit was in Mode 6 and had been shutdown for approximately 7 days. The temperature change in the RCS was minimal (less than 10° F) and the time to boiling was greater than 300 minutes with the upper cavity flooded (RCS level > 23 feet) and the reactor vessel head removed. The inspectors evaluated the finding using Inspection Manual Chapter (IMC) 0609, Appendix G, Figure 1, Road Map for Shutdown Findings, Table 1, Losses of Control and Attachment 1, Shutdown Operations Significance Determination Process Phase 1 Operational Checklist 4 PWR Refueling Operation, RCS level > 23' or PWR Shutdown Operation With Time to Boiling > 2 hours And Inventory in the Pressurizer. The inspectors determined that this finding was screened as having very low safety risk significance (Green) per Figure 1 because this finding did not increase the likelihood of a loss of RCS inventory or could result in a loss of RCS level instrumentation; the finding did not degrade the licensee's ability to terminate a leak or add RCS inventory when needed; and the finding did not degrade the licensee's ability to recover SDC once it is lost. Also, the inspectors determined that this finding did not meet conditions for Losses of Control Criteria per Table 1 and quantitative assessment was not required. This finding was related to the use of human error prevention techniques aspect in the work practices component in the human performance cross-cutting area (IMC 0305 aspect H.4.a). (Section 40A2.1)

Inspection Report# : [2008005](#) (*pdf*)

Significance:  Jun 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Inadequate Procedure Fails to Limit the likelihood of Heavy Load Drop Accident in Containment

The inspectors identified a NCV of 10 CFR 50, Appendix B, Criterion V, AInstructions, Procedures, and Drawings,@ for the licensee failing to have in place adequate heavy load handling procedures that would control and limit the likelihood of a heavy load drop in the containment building. The licensee entered the finding in their corrective action program for resolution as condition report 2007-14366.

The finding is greater than minor in accordance with IMC 0612, Power Reactor Inspection Reports,@ Appendix B, Issue Screening.@ Specifically, the finding is related to the Initiating Events cornerstone attribute of equipment performance in that the subject reactor vessel maintenance procedures did not control or limit the likelihood of a load drop event in containment that could challenge plant stability while shutdown. This finding is not suitable for an SDP evaluation but has been reviewed by NRC management and was determined to be of very low safety significance

(Green). The finding was not greater than Green because no actual load drop accident had taken place. No cross-cutting aspect associated with this finding was identified. (Section 40A5)

Inspection Report# : [2008003](#) (*pdf*)

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*)

Mitigating Systems

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform a Required TS Surveillance

The inspectors identified a Green noncited violation of Technical Specifications 3.8.1, "AC Sources," for failure to perform a required monthly surveillance test in its entirety. Specifically, the inspectors identified that St. Lucie has not performed Unit 1 Emergency Diesel Generator (EDG) technical specification (TS) surveillance requirement 4.8.1.1.2 as written to verify the fuel oil transfer pumps will transfer fuel from the storage tank to the engine mounted day tanks at least every 31 days to demonstrate operability. The licensee entered the finding in their CAP as CR 2009-4976.

The finding is more than minor in accordance with Inspection Manual Chapter (IMC) 0612, Power Reactor Inspection Reports, "Appendix B, Issue Screening." Specifically, it impacts the mitigating systems cornerstone objective in that it affects the operability, availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences. Using Manual Chapter 0609, "Significance Determination Process," Phase 1 worksheet, this finding was determined to be of very low safety significance since it did not represent an actual loss of a safety function. The inspectors determined that the cause of this finding has a crosscutting aspect in the area of human performance associated with the resources attribute, in that the operators did not have adequate procedural guidance available to completely test the fuel oil transfer system as required by technical specifications.

Inspection Report# : [2009002](#) (*pdf*)

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Take Timely and Effective Corrective Actions for EDG Day Tank Level Switch Failure

The inspectors identified a Non Cited Violation (NCV) of 10 CFR 50, Appendix B, Criterion XVI, Corrective Action, for failure of the licensee to take timely and effective corrective actions to prevent recurrence of Unit 1 emergency diesel generator (EDG) day tank low level switch failures starting in 2007. Specifically, in June 2007, the licensee performed an apparent cause evaluation of “sticking” level switches and determined that a manufacturing defect associated with the packing gland of the float’s pivot shaft caused some restricted movement. The licensee also determined that extended shelf life contributed to the failures of these level switches. However, other than replacing the switches with new ones, the only corrective action(s) that resulted from this evaluation were to ensure that switches manufactured before 2000 were not used for plant applications. Subsequently, in October 2008, the 1A-EDG day tank low level switch failed during the 24 hour EDG run and again failed during maintenance activities in February 2009.

The finding is more than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone. The finding was determined to have very low safety significance because an SDP Phase 3 analysis determined that the risk was less than 1E-6/year. This finding was related to the corrective action attribute of the problem identification and resolution cross-cutting area in the aspect of appropriate and timely corrective actions (IMC 0305 aspect P.1.d).

Inspection Report# : [2009002](#) (*pdf*)

Significance:  Mar 31, 2009

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Perform an Adequate Post Maintenance Test on the 1A-EDG Fuel Oil Day Tank Low Level Switch

The inspectors identified a NCV of TS 6.8.1.a and Regulatory Guide (RG) 1.33, for the licensee failing to specify and ensure an appropriate post maintenance test (PMT) was performed as required by administrative procedure ADM-78.01, “Post Maintenance Testing.” Specifically, the inspectors identified that after replacement of an emergency diesel generator (EDG) fuel oil day tank low level instrument, an inadequate PMT was performed because the instrument switch mechanism was not demonstrated functional by actual lowering of the fuel oil level within the tank to actuate the float assembly. The licensee entered the finding in their CAP as CR 2008-32722.

The finding is more than minor because it is associated with the equipment performance attribute of the mitigating systems cornerstone. The finding was determined to have very low safety significance because it did not result in an actual loss of safety system function. This finding was related to the coordination of work activities attribute of the human performance cross-cutting area in the aspect of work control (IMC 0305 aspect H.3.b).

Inspection Report# : [2009002](#) (*pdf*)

Significance:  Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Demonstrate Ten Minutes Station Blackout Requirement

The inspectors identified a non-cited violation (NCV) of 10 CFR 50.63 for the licensee’s non-compliance with the station blackout rule since 1993. The licensee failed to demonstrate that electrical power for Unit 1 could be provided within ten minutes of the onset of a station blackout (SBO) event and subsequently failed to perform a coping analysis when the ten minutes was not demonstrated. The licensee initiated condition report 2007-28746 with an action to perform a coping analysis in lieu of demonstrating that the ten minute commitment could be met. The coping analysis will be reviewed by the NRC (Office of Nuclear Reactor Regulation).

This finding is more than minor because it is associated with the equipment performance attribute and affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to preclude undesirable consequences during a station blackout. The inspectors did not identify a cross-cutting aspect for this finding. (Section 4OA5.1)

Inspection Report# : [2008004](#) (*pdf*)

G**Significance:** Sep 30, 2008

Identified By: NRC

Item Type: NCV NonCited Violation

Failure to Monitor the Station Blackout Cross-tie Cable

The inspectors identified a Green non-cited violation (NCV) of 10 CFR 50.65(a)(1) for the licensee's failure to monitor the SBO cross-tie cable for Units 1 and 2 against license established goals. The cable has not been tested or energized since 1993. The licensee initiated condition report 2007-36986 for the development of a monitoring program for the cross-tie cable.

This finding is more than minor because it is associated with the design control attribute and affected the mitigating systems cornerstone objective of ensuring the availability, reliability, and capability of systems that respond to initiating events to preclude undesirable consequences during a station blackout. The inspectors did not identify a cross-cutting aspect for this finding. (Section 4OA5.2)

Inspection Report# : [2008004](#) (*pdf*)

Barrier Integrity

Emergency Preparedness

Occupational Radiation Safety

Public Radiation Safety

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.

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*)

Last modified : May 28, 2009