



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 REGION II
 101 MARIETTA STREET, N.W.
 ATLANTA, GEORGIA 30323

Report Nos.: 50-335/90-11 and 50-389/90-11

Licensee: Florida Power & Light Co
 9250 West Flagler Street
 Miami, FL 33102

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

Facility Name: St. Lucie 1 and 2

Inspection Conducted: April 26 - May 7, 1991

Inspectors:	<u><i>R. A. Elrod</i></u>	<u>5/15/91</u>
	for S. A. Elrod, Senior Resident Inspector	Date Signed
	<u><i>M. A. Scott</i></u>	<u>5/15/91</u>
	for M. A. Scott, Resident Inspector	Date Signed
Approved By:	<u><i>R. V. Crlenjak</i></u>	<u>5/15/91</u>
	R. V. Crlenjak, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Scope:

This special resident inspection was conducted onsite in the review of nonroutine events involving inoperability of safety systems.

Results:

Two violations discussed in this inspection report are being considered for escalated enforcement.

Within the area inspected, the following violations were identified:

VIO 389/91-11-01, Failure to maintain the operability of the Unit 2A Containment Spray System, paragraph 2.

VIO 335,389/91-11-02, Failure to verify valve positions in the prescribed manner, paragraph 2.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- D. Sager, St. Lucie Site Vice President
- G. Boissy, Plant Manager
- J. Barrow, Fire Prevention Coordinator
- * H. Buchanan, Health Physics Supervisor
- * C. Burton, Operations Superintendent
- R. Church, Independent Safety Engineering Group Chairman
- D. Culpepper, Site Engineering Supervisor
- * R. Dawson, Maintenance Superintendent
- * R. Englmeier, Site Quality Manager
- * R. Frechette, Chemistry Supervisor
- * C. Leppla, I&C Supervisor
- * L. McLaughlin, Plant Licensing Superintendent
- A. Menocal, Mechanical Maintenance Supervisor
- L. Rogers, Electrical Maintenance Supervisor
- N. Roos, Services Manager
- C. Scott, Outage Management Supervisor
- * D. West, Technical Staff Supervisor
- J. West, Operations Supervisor
- W. White, Security Supervisor
- G. Wood, Reliability and Support Supervisor
- * E. Wunderlich, Reactor Engineering Supervisor

Other licensee employees contacted included engineers, technicians, operators, mechanics, security force members and office personnel.

NRC Employees

- S. Elrod, Senior Resident Inspector
- * M. Scott, Resident Inspector

- * Attended exit interview

Acronyms and initialisms used throughout this report are listed in the last paragraph.

2. Onsite Followup of Events (Units 1 and 2)(93702)

A nonroutine plant event involving inoperability of safety systems was reviewed to determine the need for further or continued NRC response; to determine whether corrective actions appeared appropriate, that TS were subsequently being met, and that the public health and safety received primary consideration. Potential generic impact and trend detection were also considered.



At 4:00 a.m. on April 26, while performing Unit 2 Off-Normal Operating Procedure 2-0960030, Rev 11, DC Ground Isolation, normally-closed valve HCV 14-3A, CCW Flow From 2A SDCHX, was cycled open when its normally-energized air operator solenoid valve was deenergized per the ground isolation procedure. The expected result, indication of CCW flow through the A train SDCHX, did not occur. The licensee staff found that both the SDCHX inlet and outlet manual butterfly isolation valves, SB-14348 and SB-14365 respectively, were locked and indicated OPEN on the local gearbox position pointer. However, SB-14365 was actually locked CLOSED and had an improperly indicating pointer. The licensee declared the system inoperable, then locked open SB-14365 and verified flow prior to declaring the system operable again within an hour at 5:10 a.m. A licensee check of other flow valves per AP 1-0010125A, Rev 19, Data Sheet 36, and 2-0010125A, Rev 20, Data Sheet 36, Weekly Valve Status Check, did not find additional valve position discrepancies but did find additional pointers not tight on the shaft.

The licensee notified the NRC of this finding by telephone at 7:50 a.m. on April 26 and submitted interim LER 389-91-003 on April 30.

The licensee pursued the root cause and performed an evaluation of safety significance with the following results:

- Valve 2-SB-14365 is a 14-inch manual butterfly valve located about 12 feet up in the pipe tunnel overhead. It could be observed from the floor but a ladder was needed to reach it. Butterfly valves do not have rising stems to show valve position directly. The valve had a gearbox on its side with a sweep pointer to show valve position. The sweep pointer could be set anywhere within the 360 degree sweep. The pointer had been installed on the shaft 90 degrees from the proper direction. Maintenance work request XA901021011740 had been written on October 21, 1990, to repair a broken valve position indicator on Unit 2 valve SB-14365, the isolation valve for SDCHX 2A to return header A. This work request was completed on January 17, 1991, as follows: "Contacted operations department to verify position of valve. Installed new arrow indicator to match position of valve."
- AP 2-0010125A, Rev 20, Surveillance Data Sheets, Data Sheet 36, Weekly Valve Status Check, Appendix D, Component Cooling Water, and AP 2-00101123, Rev 48, Administrative Control of Valves, Locks, and Switches, require periodic valve lineup verification including the SDCHX cooling water outlet valves. Standing Night Order T2, Locked Valves, invoked by AP 0010120, Rev 48, Duties and Responsibilities of Operators on Shift, required that locked valve positions be verified by unlocking the valve and physically checking valve motion in the closing direction. Training had been completed on the details of the night order during each of the last two requalification training cycles (1990 and 1991).
- The licensee discovered that, while the weekly valve lineup verifications had been accomplished, they had not been accomplished

per the night order, thus the weekly checks by the operators failed to detect this mispositioned valve.

Unit 2 TS 3.6.2.1, Containment Spray System, requires that, in Modes 1, 2, and 3, two independent containment spray systems be OPERABLE. Further detailed requirements are listed, including the requirement that each spray system flow path from the containment sump be via an OPERABLE SDCHX. If one containment spray system is inoperable, it must be restored within 72 hours or the plant shut down and further actions taken.

TS definition 1.19 defines a system, subsystem, train, component, or device as being OPERABLE or having OPERABILITY when it is capable of performing its specified function(s) and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication, or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

The 2A containment spray system was not OPERABLE from about November 29, 1990, when manual CCW valve 2-SB-14365, servicing the 2A shutdown cooling heat exchanger, was locked closed vice locked open, until April 26, 1991, when the valve position was corrected within one hour of discovery. The 2A SDCHX was not OPERABLE with the manual CCW outlet valve closed because it could not cool recirculation flow from the containment sump. The 2A containment spray system was not OPERABLE with an inoperable SDCHX. The operators should have known from weekly valve position verifications that the valve was mispositioned.

During this time period, the 2B containment spray system was also removed from service for about 2 days and 5 hours on February 19 - 21, 1991. The 2B emergency diesel generator system was also removed from service for about 18 hours on December 19, 1990; for about 2 days and 14 hours on January 15 - 18, 1991; for about 20 hours on January 29 - 30, 1991; for about 23 hours on February 26 - 27, 1991; for about 13 minutes on March 5, 1991; and for about 17 hours on March 26 - 27, 1991. During these periods, the plant was operated with both trains of containment spray inoperable.

Failure to maintain the operability of the Unit 2A Containment Spray System is a violation (389/91-11-01).

AP 2-0010125A, Rev 20, Surveillance Data Sheets, Data Sheet 36, Weekly Valve Status Check, Appendix D, Component Cooling Water, and AP 2-0010123, Rev 48, Administrative Control of Valves, Locks, and Switches, require periodic valve lineup verification including the SDCHX cooling water outlet valves. Standing Night Order T2, Locked Valves, that was invoked by AP 0010120, Rev 48, Duties and Responsibilities of Operators on Shift, requires that locked valve positions be verified by unlocking the valve and physically checking valve motion in the closing direction. Training had been completed on the details of the night order during each of the last two requalification training cycles (1990 and 1991).

On April 26, 1991, valve 2-SB-14365, the "A" train SDCHX cooling water outlet isolation, was discovered locked closed when, for train operability, it was required to be locked open. The valve was estimated to be locked closed on November 29, 1990, during unit startup from an outage. Over this time period, surveillances performed weekly to verify proper position did not identify the mispositioned valve. The actual valve position was discovered while troubleshooting a CCW flow problem and not during the normal weekly surveillance.

Failure to properly verify valve positions and failing to discover a mispositioned CCW valve is a violation (335,389/91-11-02).

IR 50-335,389/88-20 addressed a similar TS violation concerning the 1B EDG fuel oil transfer pump discharge valve not being correctly positioned, resulting in that EDG system being inoperable. One of the corrective actions for that violation was the non-licensed operator training indicated above.

3. Exit Interview (30703)

The inspection scope and findings were summarized on May 7, 1991, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings listed below. Proprietary material is not contained in this report. Dissenting comments were not received from the licensee.

Item Number	Status	Description and Reference
389/89-11-01	open	VIO - Failure to maintain the operability of the Unit 2A Containment Spray System, paragraph 2.
335,389/89-11-02	open	VIO - Failure to verify valve positions in the prescribed manner, paragraph 2.

4. Abbreviations, Acronyms, and Initialisms

AP	Administrative Procedure
CCW	Component Cooling Water
DC	Direct Current
ESF	Engineered Safety Feature
HCV	Hydraulic Control Valve
LER	Licensee Event Report
SDCHX	Shut Down Cooling Heat Exchanger
TS	Technical Specification
VIO	Violation (of NRC requirements)