



Florida Power & Light Company, 6501 South Ocean Drive, Jensen Beach, FL 34957

March 12, 2001

L-2001-052  
10 CFR § 50.73

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D. C. 20555

Re: St. Lucie Units 1 and 2  
Docket Nos. 50-335/389  
Reportable Event: 2001-001-00  
Date of Event: January 9, 2001  
Control Room Ventilation Emergency  
Recirculation Procedures Inadequate

The attached Licensee Event Report 2001-001 is being submitted pursuant to the requirements of 10 CFR § 50.73 to provide notification of the subject event.

Very truly yours,

Rajiv S. Kundalkar  
Vice President  
St. Lucie Nuclear Plant

RSK/EJW/KWF  
Attachment

cc: Regional Administrator, USNRC, Region II  
Senior Resident Inspector, USNRC, St. Lucie Nuclear Plant

IE22

## LICENSEE EVENT REPORT (LER)

(See reverse for required number of  
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

FACILITY NAME (1)  St. Lucie Units 1 and 2	DOCKET NUMBER (2)  05000335	PAGE (3)  Page 1 of 4
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TITLE (4)  Control Room Ventilation Emergency Recirculation Procedures Inadequate
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EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
01	09	2001	2001	- 001	- 00	03	12	2001	St. Lucie Unit 2	05000389
									FACILITY NAME	DOCKET NUMBER

  

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)										
OPERATING MODE (9)		1	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)	
POWER LEVEL (10)		100	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)	
			20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)	
			20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)	
			20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER	
			20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		Specify in Abstract below	
			20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		X 50.73(a)(2)(v)(D)		or in NRC Form 366A	
			20.2203(a)(2)(v)		50.73(a)(2)(i)(B)		50.73(a)(2)(vii)			
			20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)			
			20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)			

## LICENSEE CONTACT FOR THIS LER (12)

NAME  Kenneth W. Frehafer, Licensing Engineer	TELEPHONE NUMBER (Include Area Code)  (561) 467 - 7748
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## COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
D	VI	-	-	-	-	-	-	-	-

## SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
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## ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On January 9, 2001, St. Lucie Unit 2 was in Mode 1 at 100 percent reactor power. St. Lucie began investigating issues related to the procedural requirements for operating the control room ventilation system in the emergency mode. On January 31, 2001, St. Lucie determined that existing equipment issues with the control room differential pressure instrumentation, along with the inadequate procedural guidance for operation of the control room ventilation system during the emergency recirculation mode, could have led to inadequate control room pressurization.

This event was caused by procedural inadequacies that could have allowed operation of the control room ventilation system without proper alignment of outside air makeup to the control room envelope.

Procedure changes have been made to correct the condition. Changes to the EOPs are in progress.

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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

**Description of the Event**

On January 9, 2001, St. Lucie Unit 2 was in Mode 1 at 100 percent reactor power. St. Lucie began investigating issues related to the procedural requirements for operating the control room ventilation system in the emergency mode. On January 31, 2001, St. Lucie determined that existing equipment issues with the control room differential pressure instrumentation, along with the inadequate procedural guidance for operation of the control room ventilation during the emergency recirculation mode, could have led to inadequate control room pressurization following automatic system actuation. This was reported to the NRC under 10 CFR 50.72 on January 31, 2001.

The St. Lucie Unit 2 UFSAR description of the normal operation of the control room ventilation system is with outside air makeup provided by either of two outside air intakes. The operators control the return air flowrate by adjusting the return dampers to maintain a positive pressure of .125 inch water gage to the average pressure differential between the control room and its surroundings. PDIS-25-23A and PDIS-25-23B provide differential pressure indication.

The St. Lucie Unit 2 UFSAR description for emergency control room ventilation is as follows. On receipt of a containment isolation actuation signal (CIAS) from either St. Lucie Unit 1 or Unit 2, the control room emergency cleanup system (CRECS) fans are automatically started and the charcoal filter train dampers are opened. Both outside air intakes are isolated by redundant low leakage butterfly valves I-FCV-25-14, -15, -16, and -17 located in the outside air makeup ducts.

The control room outside air intakes are provided with radiation monitors. Upon receipt of a high radiation signal, isolation valves I-FCV-25-14, -15, -16 and -17 automatically close to prevent contaminated outside air from entering the control room. The CRECS fans automatically start to provide HEPA and charcoal filtration to the recirculating air. Following control room isolation, the UFSAR states that the operator restores outside air makeup by selecting the set of valves to open corresponding to the lowest radiation levels by observing the radiation monitors located in the outside air intake ducts.

Previously, St. Lucie discovered that PDIS-25-23A and PDIS-25-23B indicated approximately .1 to .15 inches water gage differential pressure when the control room was equalized with its surroundings. During the development of procedural guidance to compensate for the recently identified positive pressure bias, St. Lucie identified that procedural guidance for operation of CRECS in the emergency mode was inadequate.

A review of emergency operating procedures (EOPs) determined that the operator would verify system alignment and proper operation in control room clean-up mode (recirculation) during execution of Table 2 of EOP-99, "Appendixes, Figures, and Tables." This would be approximately 45-60 minutes into the event. However, there is no instruction within the EOPS to align the outside air intake valves to provide outside air makeup.

2-ONP-25.02, "Ventilation Systems," Appendix B, aligns the outside air make up based on CIAS or Outside Air Intake Radiation monitor alarms. The procedure requires that the operators select a set of outside air intake valves to throttle open based on the radiation levels detected by the outside air intake radiation monitors. The procedure also contains throttling criteria for the chosen outside air intake valves in order to maintain pressure in the control room greater than .125 inches water gage and maintain the makeup air flow rate less than 450 cfm. However, if the throttling

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criteria are already met, the procedure does not clearly require opening a set of outside air intake valves. If an operator elected not to open a set of outside air intake valves because the minimum throttling criteria were met, then continued operation of the control room ventilation system in extended emergency recirculation mode would invalidate the UFSAR operational description of the control room ventilation system.

2-ONP-25.02, "Ventilation Systems," Appendix C, also provides for operator response to the control room annunciator if the differential pressure drops to near zero. However, this alarm would not occur with the small positive bias exhibited by the control room pressure differential pressure gauges.

**Cause of the Event**

This event was caused by procedural inadequacies that could have allowed operation of the control room ventilation system without proper alignment of outside air makeup to the control room envelope. The positive control room pressure bias is considered to be a contributing factor to this event.

**Analysis of the Event**

This condition is reportable under 10 CFR 50.73(a)(2)(v)(D) as a condition that may have prevented the fulfillment of a safety function necessary to mitigate the consequences of an accident.

**Analysis of Safety Significance**

The St. Lucie Unit 2 FSAR states that the design of the control room ventilation system requires that the operators align the outside air intake valves to provide fresh air make up to the control room envelope to maintain a positive pressure with respect to the surrounding spaces. Maintaining a positive pressure during postulated accident conditions ensures that unfiltered inleakage to the control room is minimized.

The procedures governing operation of the control room ventilation system were inadequate in that the operators were not clearly directed to open the outside air intake valves to establish make up air to the control room. Although the initial operator response to verify control room emergency recirculation may not have resulted in control room pressurization, either control room personnel, support personnel in the Technical Support Center, or Emergency Operations Facility personnel would have ultimately identified extended operation of the control room in the recirculation mode.

Improper operation of the control room ventilation system has the potential for operator doses to exceed GDC 19 criteria (5 Rem whole body or 30 Rem thyroid). However, FPL judges that the total operator dose would be but a fraction of 10 CFR Part 100 limits. Therefore, this event had no adverse impact on the health and safety of the public.

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**Corrective Actions**

1. The St. Lucie Unit 2 control room differential pressure indicators were calibrated and the sensing lines blown down. The positive control room pressure bias remains and is considered to be the result of external environmental influences.
2. The Units 1 and 2 ONP-25.02 were revised to accommodate the positive pressure bias exhibited by the control room differential pressure indicators
3. The Units 1 and 2 EOPs will be revised to ensure makeup air is provided to the control room ventilation system when operating in the emergency mode.

**Additional Information**Failed Components Identified

None

Similar EventsNone