



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

July 16, 2004

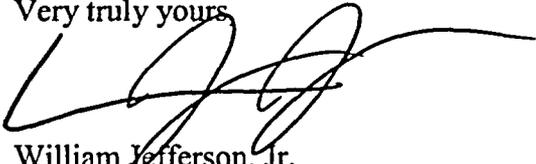
L-2004-157
10 CFR § 50.73

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

Re: St. Lucie Unit 1
Docket No. 335
Reportable Event: 2004-002-00
Date of Event: May 17, 2004
B Train Emergency Core Cooling System
Room Ventilation System Inoperable

The attached Licensee Event Report 2004-002 is being submitted pursuant to the requirements of 10 CFR § 50.73 to provide notification of the subject event.

Very truly yours,



William Jefferson, Jr.
Vice President
St. Lucie Nuclear Plant

WJ/KWF
Attachment

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 Unit 1	DOCKET NUMBER (2) 05000335	PAGE (3) Page 1 of 4
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TITLE (4)
B Train Emergency Core Cooling System Room Ventilation System Inoperable

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
05	17	2004	2004	- 002	- 00	07	16	2004	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 100	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)			
	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 or in NRC Form 366A			
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)					
	20.2203(a)(2)(v)		X 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) (772) 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
A	VG		-	NO	-	-	-	-	-

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 May 17, 2004, St. Lucie Unit 1 was in Mode 1 at 100 percent reactor power. A failed emergency core cooling system equipment room ventilation surveillance test led to the discovery of a long-standing breach in the area ventilation boundary that rendered the "B" train of the ventilation system inoperable. The HVE-9B exhaust fan was unable to draw sufficient negative differential pressure with respect to the surrounding reactor auxiliary building spaces.

The ventilation boundary breach was caused by an open hatch that was evaluated only for its effect on the fire protection boundary, and not for any postulated effect on the ECCS equipment room pressure boundary.

Corrective actions included closing the hatch, performing a successful surveillance, placing information placards, and procedure changes to ensure that fire breach permits consider potential effects on ventilation systems.

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

Description of the Event

On May 17, 2004, St. Lucie Unit 1 was in Mode 1 at 100 percent reactor power. The "B" train emergency core cooling system (ECCS) equipment room area ventilation system exhaust fan HVE-9B [EIIS:VG:FAN] was unable to draw sufficient negative differential pressure measured between the ECCS equipment room and the surrounding reactor auxiliary building (RAB) during surveillance testing. The ECCS equipment room differential pressure is monitored by PDIS-25-16A and PDIS-25-16B and annunciated in the control room by annunciators S-29 and R-60, respectively. Although no control room alarms were received during the surveillance, the local differential pressure readings indicated that the area was not at a negative pressure. The "B" train ECCS equipment room ventilation was conservatively declared inoperable while the condition was investigated.

Under normal operation, the reactor auxiliary building ventilation main supply and exhaust system provides the necessary ventilation for the ECCS pump rooms. Under accident conditions when several or all of the pumps are operating, the air supply to the nonessential section of the reactor auxiliary building is directed to the pump rooms to provide additional cooling. Dampers are positioned automatically on a safety injection actuation signal (SIAS) to provide proper flow path for supply air to the ECCS area. Simultaneously, exhaust fans HVE-9A and HVE-9B are energized and dampers in the exhaust ductwork are positioned to allow the fans to exhaust air through the HEPA and charcoal filter bank before discharging to the atmosphere.

The ventilation system is sized to maintain a slightly negative pressure in the ECCS area with respect to surrounding areas of the RAB. Access into the ECCS area from other parts of the RAB is through gasketed self-closing or locked closed doors. Opening of doors is under administrative controls.

The initial investigation revealed that all the doors leading to the ECCS equipment room were secured except a maintenance hatch [EIIS:DR], located south of the decontamination room at the 19.5 ft elevation that leads to the -0.5 ft elevation of the RAB, was found open. The hatch was closed and the surveillance run of HVE-9B was repeated on May 18, 2004. With the hatch closed, the surveillance run was completed satisfactorily.

Further investigation revealed that on April 20, 2004, a fire breach permit was approved in accordance with plant procedure AP 0010434, "Plant Fire Protection Guidelines" to open the hatch to allow transporting chemicals within the RAB during the spring 2004 refueling outage. When establishing a fire breach permit in accordance with AP 0010434, Section 8.10, "Penetrating a Fire Rated Assembly," the effect that the breach has on rated fire barriers has to be evaluated by qualified fire protection or Operations personnel, compensatory measures must be determined and approved by engineering personnel, and Operations personnel have to approve the fire breach and compensatory measures. The hatch remained open until its adverse effect on the ECCS equipment room ventilation boundary was discovered and was closed on May 18, 2004.

Cause of the Event

The cause for the failure of HVE-9B to draw the ECCS pump room to a negative pressure was a breach of the ECCS equipment room pressure boundary resulting from the open hatch. The open hatch was only evaluated for its effect on the fire protection boundary; there was no procedural requirement to evaluate the potential effect of the open hatch on the ECCS equipment room ventilation boundary. When the hatch was

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closed the surveillance run was completed satisfactorily. In order to confirm the effect of the hatch, entrance doors in the vicinity of the hatch were opened and closed while HVE-9B was running. The control room received ECCS equipment room high pressure alarms while the doors were open.

Analysis of the Event

This condition is reportable in accordance with 10 CFR 50.73 (a) (2) (i) (B) as the operation of the facility in a condition prohibited by the Technical Specifications (TS). TS 3.7.8.1 requires that two independent ECCS area exhaust air filter trains be operable in Modes 1, 2, 3, and 4. If one ECCS area exhaust air filter train is inoperable, then the LCO requires restoration within a 7-day allowed outage time (AOT). Although there is no TS surveillance requirement that specifically measures the developed differential pressure with respect to adjacent RAB spaces, the ECCS area ventilation system is designed to maintain the ECCS equipment room at a slightly negative pressure. This design requirement assures that any iodine activity associated with any ECCS or containment spray system equipment leakage is passed through the ECCS equipment room ventilation system charcoal absorbers.

When the hatch was open, HVE-9B was unable to maintain a negative pressure with respect to adjacent RAB spaces, rendering the train technically inoperable for a time period exceeding the TS 7-day AOT.

Analysis of Safety Significance

During the surveillance run on May 17, 2004, HVE-9B was able to draw the ECCS equipment room to -0.05 inch water gage (wg) as read from the local PDIS-25-16B and +0.05 inch wg as read from PDIS-25-16A. The normal loop uncertainty for PDIS-25-16A and 16B is +/- 0.09 inch wg. Although the "B" train ECCS equipment room ventilation was maintaining the area equalized with the surrounding areas with the hatch open, the train was conservatively declared inoperable due to its inability to draw the area to a measurable negative pressure with respect to its surroundings.

During a postulated accident condition at the time the hatch was open and a coincidental failure of HVE-9A, HVE-9B would have drawn the ECCS equipment room to near negative pressure which would have minimized the out leakage of potentially contaminated air from the ECCS room to the surrounding RAB. During an extended operation of one ECCS exhaust fan over the duration of the accident, it is postulated that the ECCS room would essentially be at a negative pressure since the supply air flow to the ECCS equipment room is less than the exhaust flow out of the room. As long as one exhaust fan is running, there should not be sufficient supply air flow to force the potentially contaminated air from the ECCS equipment room to the surrounding RAB.

Based on the above, FPL judges that this condition would not have had a significant effect on post-accident offsite doses.

The configuration of the hatch had a negligible effect on the ECCS equipment room "A" train ventilation system. This was demonstrated by the successful surveillances performed on HVE-9A on April 18, 2004, prior to opening the hatch, May 10, 2004, while the hatch is open, and again on June 7, 2004, following the closure of the hatch. Additionally, the St. Lucie Unit 2 ECCS equipment room ventilation system configuration is similar to Unit 1. Although the St. Lucie Unit 2 ECCS equipment room ventilation system could be affected in a similar manner, the ECCS equipment room ventilation system is not governed by Technical Specifications because the

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system is not credited in the St. Lucie Unit 2 safety analysis for accident dose mitigation.

Corrective Actions

1. The maintenance hatch was closed on May 18, 2004.
2. The surveillance run on HVE-9B was completed satisfactorily on May 18, 2004.
3. Placards (signs) were posted at the hatch locations on each Unit to indicate that opening the hatches affects the ECCS area ventilation system. The Unit 1 signs were posted on May 18, 2004 and Unit 2 signs were posted on June 28, 2004.
4. Procedure AP-0010434, "Plant Fire Protection Guidelines," will be revised by August 31, 2004, to require that engineering determine if proposed fire breach permits could potentially affect ventilation systems in the area. If there is a negative impact on ventilation systems, then engineering will communicate that information to Operations.

Additional Information

Failed Components Identified

None

Similar Events

None