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 AUTH. NAME AUTHOR AFFILIATION
 MEAD, S.C. Florida Power & Light Co.
 SAGER, D.A. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 89-009-00: on 891128, containment local leak rate exceeds Tech Spec due to valve closure stop out of adjustment.

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DECEMBER 20 1989

L-89-461
10 CFR 50.73

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

Gentlemen:

Re: St. Lucie Unit 2
Docket No. 50-389
Reportable Event: 89-09
Date of Event: November 28, 1989
Containment Local Leak Rate Exceeds
Technical Specifications Due To
Valve Closure Stop Out Of Adjustment

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

Very truly yours,

D. A. SAGER

by H.G. Bony
D. A. Sager
Vice President
St. Lucie Plant

DAS/JRH/rh

Attachment

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

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PDR ADUCK 05000389
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) ST. LUCIE UNIT 2	DOCKET NUMBER (2) 0 5 0 0 0 3 8 9	PAGE (3) 1 OF 0 4
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TITLE (4) **CONTAINMENT LOCAL LEAK RATE EXCEEDS TECHNICAL SPECIFICATIONS DUE TO VALVE CLOSURE STOP OUT OF ADJUSTMENT**

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 NAMES	DOCKET NUMBER(S)
1	1	2 8 8 9	8 9	0 0 9	0 0	1	2 2 0 8 9		N/A	0 5 0 0 0

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)				
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(c)	<input type="checkbox"/> 50.73(a)(2)(iv)	<input type="checkbox"/> 73.71(b)	<input checked="" type="checkbox"/> OTHER (Specify in Abstract below and in Text, NRC Form 366A)
	<input type="checkbox"/> 20.405(a)(1)(i)	<input type="checkbox"/> 50.36(c)(1)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)	
	<input type="checkbox"/> 20.405(a)(1)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(vi)		
	<input type="checkbox"/> 20.405(a)(1)(iii)	<input type="checkbox"/> 50.73(a)(2)(i)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)		
	<input type="checkbox"/> 20.405(a)(1)(iv)	<input type="checkbox"/> 50.73(a)(2)(ii)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)		
	<input type="checkbox"/> 20.405(a)(1)(v)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)		

LICENSEE CONTACT FOR THIS LER (12)

NAME SANDRA C. MEAD, SHIFT TECHNICAL ADVISOR	TELEPHONE NUMBER
	AREA CODE: 4 0 7 NUMBER: 4 6 5 - 3 5 5 0

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH: 1 1	DAY: 1 5	YEAR: 9 0
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On November 28, 1989 at 1345, with Unit 2 in Mode 1 at 100% power, a routine local leak rate surveillance test on Containment Penetration 10 revealed an "as found" leakage rate across FCV-25-5 of 908,970 standard cubic centimeters per minute. This penetration contains the exhaust line for the Containment Purge System, and is subject to Type C testing as per 10CFR50 Appendix J. This "as found" leakage rate was in excess of the allowable leakage per Technical Specification 4.6.1.7.3.

The root cause of this event is indeterminate at this time. The valve will be disassembled and inspected at the next Unit 2 refueling outage to determine the reason for the failure of the local leak rate test on this valve. A revision to the Licensee Event Report will be submitted when the root cause of this event is determined.

This Licensee Event Report is being submitted on a voluntary basis. The corrective actions were: 1) To verify other in-line valves FCV-25-4 and FCV-25-6 were closed and de-energized. 2) To adjust the valve seat travel stop adjustment screw so the valve would seat more tightly. 3) To successfully retest FCV-25-5 and declare it operable. 4) To increase the test frequency on this valve to ensure continued tightness.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

DESCRIPTION OF THE EVENT

On November 28, 1989 at 1345, with Unit 2 in Mode 1 at 100% power, a routine local leak rate surveillance test on Containment Penetration 10 revealed a leakage across FCV-25-5 (EIIS-ISV) of 908,970 standard cubic centimeters per minute. Penetration 10 contains a 48 inch exhaust line for the Containment Purge System, with three butterfly valves, of which FCV-25-4 and FCV-25-5 are subject to Type C testing, per Unit 2 Technical Specification 3.6.1.2.b, Table 3.6-1 and Surveillance 4.6.1.7.3. Local leak rate testing is performed by pressurizing the piping between the inboard (FCV-25-4) and outboard (FCV-25-5) valves. The "as found" leakage of the penetration was in excess of the allowable leakage of 0.05 L_a, or 48,568 standard cubic centimeters per minute.

In accordance with Technical Specification 3.6.1.7, action statement "c", action was undertaken to restore the leakage rate to within the specified limit within 24 hours. In accordance with Technical Specification 3.6.3 FCV-25-4 and FCV-25-6, both of which are in series with FCV-25-5, were verified to be closed and de-energized, ensuring containment isolation.

Technical Specification 3.6.1.2 also limits containment leakage rate to a combined leakage rate of less than or equal to 0.60 L_a for all penetrations and valves subject to Type B and C testing. Based on guidance from ANSI 56.8 for a combined test, one-half of the leakage is assigned to each valve, thus the 0.60 L_a limit was not exceeded.

Following the adjustment of the valve seat travel stop adjustment screw, the leakage rate across FCV-25-5 was reduced to 400 standard cubic centimeters per minute. Technical Statement 3.6.1.7 was exited within the required time limit at 1720 when the valve was returned to service after the successful retest.

CAUSE OF THE EVENT

The root cause of this event is indeterminate at this time. Without disassembly of the valve, it cannot be conclusively determined why the valve closure stop is out of adjustment. The valve will be disassembled and inspected at the next Unit 2 outage to determine the reason the valve failed its local leak rate test. A revision to this Licensee Event Report will be submitted when the root cause of this event is determined.

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

ANALYSIS OF THE EVENT

This Licensee Event Report is being written on a voluntary basis. This event is not considered reportable per 10CFR50.73 because the time limitations of the applicable Technical Specification action statements were not exceeded. The integrity of this penetration was always maintained.

Technical Specification 3.6.1.2 limits containment leakage rates for combined leakage of less than or equal to 0.60 L_a for all penetrations and valves subject to Type B and C testing. Based upon guidance from ANSI 56.8, for a combined test one-half of the leakage is assigned to each valve, thus the 0.60 L_a limit was not exceeded.

The LCO for Technical Specification 3.6.1.7 was entered at 1345 on November 28, 1989 due to the excessive leakage found after performing the local leak rate test. The valve was successfully retested following adjustment of the valve stop. Action statement "c" of Technical Specification 3.6.1.7 was exited within the required time limit at 1720 on November 28, 1989 when the valve was returned to service.

The limits for containment leakage rates in the Technical Specifications are from the requirements of 10CFR50 Appendix J. The leakage rate measured from testing is higher than that which could actually occur under hypothetical accident conditions due to the conservative manner in which the test results are evaluated. When calculating local leak rates, it is assumed that for a given pair of isolation valves, the valve having the lower leakage rate fails fully open. Thus the leakage across the penetration is governed by the valve having the higher leakage rate. In reality, with both FCV-25-4 and FCV-25-6 closed and de-energized, which are both in series with FCV-25-5, the integrity of the penetration was maintained. The satisfactory test result (leakage rate: 400 standard cubic centimeters per minute) for FCV-25-4 was an assurance that containment integrity for Penetration 10 was maintained at all times during the degraded condition of FCV-25-5. Therefore, at no time was the health and safety of the public endangered.

This same valve failed its local leak rate test six months earlier due to the valve closure stop out of adjustment due to personnel error. The valve passed its local leak rate test three months ago. With this most recent failure of the valve, it has been speculated that the correct root cause of the problem may not have been determined. Due to this, corrective actions are being undertaken which will ensure the continued tightness of the valve seat until the valve can be disassembled and the root cause for these failures determined with certainty.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

CORRECTIVE ACTIONS

- 1) The series redundant valves for Penetration 10, FCV-25-4 and FCV-25-6, were verified to be closed and de-energized.
- 2) FCV-25-4 was verified to have a leakage rate well within the acceptance criteria for the Technical Specifications.
- 3) I&C adjusted the valve seat travel stop adjustment screw for the closing of the valve.
- 4) Technical Staff Test Group personnel retested FCV-25-5.
- 5) The testing frequency on FCV-25-5 will be increased to once every six weeks to ensure continued tightness.
- 6) The root cause of the valve local leak rate failure will be determined at the next Unit 2 refueling outage.

ADDITIONAL INFORMATION

Component Identification:

Manufacturer: Henry Pratt Co.
 Valve Model: NR1A
 Valve Size/Type: 48" Carbozinc 11/Butterfly
 Actuator Type: Bettis Cylinder Air Operated
 Actuator Model: T-520B-SR2

Previous Similar Events:

For the most recent similar event, see Licensee Event Report 389-89-004, which pertains to excessive penetration leakage across FCV-25-5 on Unit 2 due to valve closure stop out of adjustment due to personnel error.