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ACCESSION NBR: 8803140389 DOC. DATE: 88/03/11 NOTARIZED: NO DOCKET #
 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
 AUTH. NAME AUTHOR AFFILIATION
 MENDOZA, V.N. Florida Power & Light Co.
 CONWAY, W.F. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 88-002-00: on 880210, total bypass leakage on containment radiation monitor isolation valve exceeded Tech Specs. W/8 ltr.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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	NRR/DEST/MEB9H3	1		1	NRR/DEST/MTB 9H	1		1
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	REG FILE 02	1		1	RES TELFORD, J	1		1
	RES/DE/EIB	1		1	RES/DRPS DIR	1		1
	RGN2 FILE 01	1		1				
EXTERNAL:	EG&G GROH, M	5		5	FORD BLDG HOY, A	1		1
	H ST LOBBY WARD	1		1	LPDR	1		1
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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) St. Lucie, Unit 1		DOCKET NUMBER (2) 0 5 0 0 0 3 3 5 1 OF 0 4	PAGE (3) 1 OF 0 4
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TITLE (4) TOTAL BYPASS LEAKAGE ON CONTAINMENT RADIATION MONITOR ISOLATION VALVE FCV-26-1 EXCEEDED TECHNICAL SPECIFICATION LIMIT DUE TO STEM CORROSION

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)
0 2	1 0	8 8	8 8	0 0 2	0 0	0 3	1 1	8 8	N/A		0 5 0 0 0 0
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)											

OPERATING MODE (9) 1	20.402(b)	20.406(e)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 1 0 0	20.406(a)(1)(i)	50.36(a)(1)	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.36(a)(2)	50.73(a)(2)(vi)	OTHER Specify in Abstract below and in Test NRC Form 366A
	20.406(a)(1)(iii)	X 50.73(a)(2)(ii)	50.73(a)(2)(vii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(iii)	50.73(a)(2)(vii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(viii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Victor N. Mendoza, Shift Technical Advisor	TELEPHONE NUMBER AREA CODE 3 0 5 4 6 8 - 4 1 5 5
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS
X	J, M	I, S, V	A, 391	Y					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR
N/A

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 10, 1988, St. Lucie Unit 1 was in Mode 1, 100% power, and at steady state conditions. During the local leak rate test performed by the plant's test group, the inside containment isolation valve for the containment atmosphere radiation monitor, FCV-26-1 (E1IS-JM), was found to have a leakage rate of approximately 100 standard cubic feet per minute (SCFM). This was in excess of the plant's Technical Specification limit of 0.27 La (equal to 245,153 standard cubic centimeters per minute, SCCM). The outside containment isolation valve was immediately closed, deactivated and secured in the isolation position by removing the fuse to its power source. (in order to comply to the Technical Specification requirement).

The root cause of the event was dirt accumulation and corrosion build-up on the actuator stem seal housing assembly, which resulted in a momentary binding of the stem which prevented the valve from fully closing. A contributing factor for the failure may have been due to the unique design of the actuator, which is a reverse acting actuator with a diaphragm plate for a direct acting actuator.

The actuator stem was cleaned and the stem seal housing assembly was refurbished. Also, the diaphragm was replaced with a new diaphragm. The valve was stroke tested satisfactorily. Post maintenance leak test was performed and the leakage rate was found to be 450 SCCM, well within the Technical Specification limit.

At no time during the event was the health and safety of the public endangered.

IE-22 //

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

DESCRIPTION OF THE EVENT

At 0215, on February 6, 1988, operations personnel were performing the quarterly periodic stroke test on the containment isolation valve for the containment radiation monitor (EIIS-JM). During this test, it was found out that the valve FCV-26-1 had a dual open/close indication. This was indicative of the valve not being in its full closed position. The outside containment isolation valves FCV-26-2 and FCV-26-4 were immediately closed to comply with the Technical Specification action statement. At 0756, the valve FCV-26-1 was re-stroked for evaluation and it was noted to have fully closed. The FCV-26-1 was declared back in service and the valves FCV-26-2 and FCV-26-4 were opened.

At 1010, on February 9, 1988, operations personnel stroked valve FCV-26-1 for Instrument and Control (I&C) maintenance personnel for troubleshooting purposes. It was noted that the valve did not fully close. Again, the outside containment isolation valves FCV-26-2 and FCV-26-4 were immediately closed. I & C personnel made a containment entry to adjust the FCV-26-1 actuator limit switch and re-stroked the valve. The valve indicated fully closed.

On February 10, 1988, the plant test group performed a total bypass leak test on valve FCV-26-1 as part of post maintenance testing and found the total bypass leakage rate was approximately 100 standard cubic feet per minute (SCFM) which exceeded the Technical Specification limit of 0.27 La (equal to 245,153 standard cubic centimeter per minute, SCCM). Immediately, the outside containment valve FCV-26-2 was tested to ensure containment integrity. The leakage rate of the valve FCV-26-2 was found to be 1100 standard cubic centimeter per minute (SCCM) which was well within the Technical Specification limit. The outside containment isolation valve was immediately closed and maintained closed until the valve FCV-26-1 was repaired and satisfactorily tested.

CAUSE OF THE EVENT

The root cause of the event was due to dirt accumulation and corrosion build-up on the actuator stem seal housing assembly. This resulted in a momentary binding of the stem which prevented the valve from fully closing. A contributing factor for the failure may have been due to the unique design of the actuator, which has a reverse acting actuator with a direct acting diaphragm plate.

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St. Lucie, Unit 1	05000335	88	002	00	03	OF 04

TEXT (If more space is required, use additional NRC Form 368A's) (17)

ANALYSIS OF THE EVENT

Technical Specification 3.6.3.1, requires that containment isolation valves shall be operable while in Mode 1 through Mode 4. With one or more of the isolation valves inoperable, restore the inoperable valve within 4 hours or isolate the affected penetration within 4 hours by the use of at least one deactivated automatic valve secured in the isolation position. During the time when containment isolation valve FCV-26-1 failed to fully close, the outside containment isolation valve FCV-26-2 was immediately closed, deactivated and secured in the isolation position by removing the fuse. This ensured that valve FCV-26-2 would remain in the isolation position while the valve FCV-26-1 was inoperable. The satisfactory test result (leakage rate of 1100 SCCM) of the outside containment isolation valve FCV-26-2 was an assurance that containment integrity was maintained during the event. When performing a local leak rate test on penetrations with a pair of isolation valves, it is assumed that the valve with the lower leakage rate fails open, thus the leakage across the penetration is governed by the valve with the higher leakage rate. The as found leakage rate of 100 SCFM was a very conservative amount based on the calculation that the leakage rate was equal to the maximum air discharge flow on a 3/8 inch tubing supply line with make-up air at 35 psig without any flow restriction from a partially closed valve. The calculated leakage rate of 100 SCFM did not take credit for the valve being in the partially closed position but rather conservatively assumed that it was full open. In the event of an accident, both of the isolation valves FCV-26-1 and FCV-26-2 are designed to fail closed, thus the actual governing leakage rate would be the leakage rate of FCV-26-2, which was found to be 1100 SCCM, well below the Technical Specification limit of 0.27 La (245,153 SCCM). Therefore, at no time was the health and safety of the public endangered. St. Lucie Unit 1 remained at mode 1, 100 percent power, and at steady state condition during the entire event.

CORRECTIVE ACTIONS

1. Operations personnel immediately isolated the affected penetration by closing the outside containment isolation valve and maintaining it in the secured isolation position by removing the fuse on the automatic isolation valve.
2. The outside containment isolation valve FCV-26-2 was immediately tested for integrity and was found to have leakage well within the Technical Specification limit.
3. The valve actuator stem for FCV-26-1 was cleaned and the corrosion build-up was removed. The actuator stem seal housing assembly was refurbished, and the valve actuator diaphragm was replaced with a new diaphragm. The valve was satisfactorily stroke tested after the repairs.

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

CORRECTIVE ACTIONS (CONTINUED)

4. The valve was leak tested after the repairs were completed. The leakage of 450 SCCM was satisfactory.
5. St. Lucie Plant Reliability Maintenance Department searched for similar industry wide failures. This identified a failure of similar nature but of different model number and size valve. No trend of this type of seal housing assembly failure has been noted on the specific actuator model and size.
6. The Instrument and Control Department has initiated a Request for Engineering Assistance (REA) for Engineering Department to evaluate the applicability of the unique design of this type of actuator and diaphragm configuration for all of the containment atmosphere radiation monitor isolation valves of similar design FCV-26-1, -2, -3, -4, -5, and -6.

ADDITIONAL INFORMATION

Failed Component Identification:

Component: Actuator Seal Housing Assembly
 Actuator Model No.: 70-13-1R
 Actuator Diaphragm Size: 35 Square Inches
 Valve Model: 70-27-1DRTX
 Valve Size/Type: 1 Inch - 150#, Glove Valve
 Manufacturer: W K M (Anchor/Darling Company)

Previous Similar Event:

For most recent similar event, see Licensee Event Report 335-87-005, which pertains to excessive penetration leakage across the valve seal on FCV-25-3.



MARCH 10 1988

L-88-124
10 CFR 50.73

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

Gentlemen:

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 88-02
Date of Event: February 10, 1988
Total Bypass Leakage on Containment Radiation
Monitor Isolation Valve FCV-26-1 Exceeded
Technical Specification Limit Due to Stem Corrosion

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,

A handwritten signature in black ink, appearing to read "W. F. Conway", is written over the typed name.

W. F. Conway
Acting Group Vice President
Nuclear Energy

WFC/GRM/gp

Attachment

cc: Dr. J. Nelson Grace, Regional Administrator,
Region II, USNRC
Senior Resident Inspector, USNRC, St. Lucie Plant

GRM/001.LER

Handwritten initials "JE22" and the number "11" are written in the bottom right corner of the page.