

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9105060103 DOC. DATE: 91/04/30 NOTARIZED: NO DOCKET #
 FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
 AUTH. NAME AUTHOR AFFILIATION
 LAUVER, C. Florida Power & Light Co.
 SAGER, D.A. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 91-003-00: on 910426, 2A shutdown cooling heat exchanger
 out of svc due to mispositioned component cooling water
 valve. Caused by personnel error. Valve correctly realigned
 & redundant train's valve checked. W/910430 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
	PD2-2 LA NORRIS, J	1 1	PD2-2 PD	1 1
INTERNAL:	ACNW	2 2	ACRS	2 2
	AEOD/DOA	1 1	AEOD/DSP/TPAB	1 1
	AEOD/ROAB/DSP	2 2	NRR/DET/ECMB 9H	1 1
	NRR/DET/EMEB 7E	1 1	NRR/DLPQ/LHFB11	1 1
	NRR/DLPQ/LPEB10	1 1	NRR/DOEA/OEAB	1 1
	NRR/DREP/PRPB11	2 2	NRR/DST/SELB 8D	1 1
	NRR/DST/SICB 7E	1 1	NRR/DST/SPLB8D1	1 1
	NRR/DST/SRXB 8E	1 1	REC FILE 02	1 1
	RES/DSIR/EIB	1 1	RGN2 FILE 01	1 1
EXTERNAL:	EG&G BRYCE, J.H	3 3	L ST LOBBY WARD	1 1
	NRC PDR	1 1	NSIC MURPHY, G.A	1 1
	NSIC POORE, W.	1 1	NUDOCS FULL TXT	1 1

NOTE TO ALL "RIDS" RECIPIENTS:

PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,
 ROOM P1-37 (EXT. 20079) TO ELIMINATE YOUR NAME FROM DISTRIBUTION
 LISTS FOR DOCUMENTS YOU DON'T NEED!

FULL TEXT CONVERSION REQUIRED
 TOTAL NUMBER OF COPIES REQUIRED: LTR 33 ENCL 33

R
I
D
S
/
A
D
D
S

R
I
D
S
/
A
D
D
S



APR 30 1991

L-91-133

10 CFR 50.73

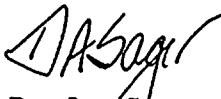
U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Gentlemen:

Re: St. Lucie Unit 2
Docket No. 50-389
Reportable Event: 91-03
Date of Event: April 26, 1991
2A Shutdown Cooling Heat Exchanger Out
of Service Due to Mispositioned Component
Cooling Water Outlet Valve Caused by Personnel Error

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event. A supplemental report will be submitted at the usual 30 day time interval.

Very truly yours,


D. A. Sager
Vice President
St. Lucie Plant

DAS:GRM:kw

Attachment

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

DAS/PSL #423

9105060103 910430
PDR ADOCK 05000389
S PDR

IE23
41

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 30.8 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-400), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) St. Lucie Unit 2	DOCKET NUMBER (2) 0510103891	PAGE (3) 1 OF 04
--	--	----------------------------

TITLE (4) **2A Shutdown Cooling Heat Exchanger Out of Service Due to Mispositioned Component Cooling Water Valve Caused by Personnel Error**

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)
04	26	91	91	003	00	04	30	91	N/A		0510101
									N/A		0510101

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) 100	20.402(b)			20.405(c)			50.73(a)(2)(iv)			73.71(b)		
	20.405(a)(1)(i)			50.36(c)(1)			50.73(a)(2)(v)			73.71(c)		
	20.405(a)(1)(ii)			50.36(c)(2)			50.73(a)(2)(vii)			OTHER (Specify in Abstract below and in Text NRC Form 366A)		
	20.405(a)(1)(iii)			50.73(a)(2)(i)			50.73(a)(2)(viii)(A)					
	20.405(a)(1)(iv)			50.73(a)(2)(ii)			50.73(a)(2)(viii)(B)					
20.405(a)(1)(v)			50.73(a)(2)(iii)			50.73(a)(2)(x)						

LICENSEE CONTACT FOR THIS LER (12)

NAME Catherine Lauver, Shift Technical Advisor	TELEPHONE NUMBER
	AREA CODE 407
	465-3550

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
A	B	E	I	S	V	P	3	4	0
				Y					

SUPPLEMENTAL REPORT EXPECTED (14)

<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
		05	28	91	1

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

This is an interim report. A followup report will be submitted.

At 0110 on April 26, 1991, with Unit 2 at 100% power, Operations personnel began searching for a DC ground. At 0400, per plant procedure, Operations cycled HCV-14-3A, Component Cooling Water (CCW) outlet from the 2A Shutdown Cooling (SDC) Heat Exchanger (HX) to de-energize its solenoid operator in an effort to locate the DC ground. After the valve opened, no flow through the heat exchanger was indicated. Upon investigation, the 2A SDC HX CCW return isolation valve SB-14365 was found to be locked closed. This valve is required to be Locked Open. It had been entered into the Valve Switch Deviation Log on October 23, 1990 as Locked Throttled and restored November 29, 1990. As this is the most recent documented manipulation date, it is assumed to have been mispositioned at this time. The valve position pointer was broken and indicated open. The cause of the mispositioning is under investigation.

Corrective actions include: the valve was correctly realigned; the redundant train's valve was checked; both units performed a full Valve Status Check.



73
4

**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION PROJECT IS 8 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-520), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) St. Lucie Unit 2	DOCKET NUMBER (2) 0 5 0 0 0 3 8 9	LER NUMBER (6)		PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		9 1 --	0 0 3 --	0 0	0 2 OF 0 4

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

DESCRIPTION OF THE EVENT

This is an interim report. A followup report will be submitted.

At 0110 on April 26, 1991, with Unit 2 at 100% power, Operations personnel began to search for a DC ground. To find a ground, plant loads are individually isolated. Per plant procedure, Operations cycled HCV-14-3A, Component Cooling Water (CCW) (EIS:CC) from the 2A Shutdown Cooling (SDC) Heat Exchanger (HX) (EIS:BP). During normal operations there is no flow through the shutdown heat exchanger; opening the valve should have resulted in 4000 gpm flow. There was no flow indicated through the HX. Operations locally verified movement of HCV-14-3A and position of CCW inlet isolation valve SB-14348. CCW outlet isolation valve SB-14365 is required to be Locked Open, was indicating open by its valve position indicator, but was in fact Locked Closed. The valve was reopened to its proper position. The redundant train's CCW outlet isolation valve position was checked as a precaution. The valve was in its proper Locked Open position, but its position indicator was also faulty.

An investigation revealed that SB-14365 was entered into the Valve Switch Deviation Log on October 23, 1990, when placed in a Locked Throttled position to balance CCW flow. On November 25, 1990, as Unit 2 was completing a refueling outage, the CCW system was placed in its operating alignment. Operating Procedure 2-0310020, "Component Cooling Water-Normal Operation," was performed. SB-14365 was verified to be Locked Open at this time. On November 29, 1990, the Valve Switch Deviation Log showed that the valve was restored to its Locked Open position. As November 29 is the last recorded date that SB-14365 was manipulated, it is assumed that the valve has been mispositioned since this time. The lack of an OPERABLE 2A SDC HX causes the 2A train of the Containment Spray System (EIS:BE) to be administratively out of service.

From 0455 on February 19 through 0315 on February 20 and 2208 on February 20 through 1700 on February 21, 1991, the 2B Containment Spray System was out of service for routine maintenance and testing. Plant records are being reviewed to see if there are any other periods of time where both trains of the Containment Spray System were out of service.

CAUSE OF THE EVENT

CCW outlet isolation valve SB-14365 is a manually operated butterfly valve located in a horizontal line about twelve feet above the floor. Valve position indication is provided by a pointer which is supposed to move with the valve stem. The pointer was broken. A Plant Work Order was written October 21, 1990 to repair the pointer and was apparently worked January 17, 1991. At the time the mispositioning was discovered, the pointer erroneously indicated Open. Investigation into this valve position indicator failure will continue.

A Standing Night Order states that to check the position of a Locked Open valve, the valve shall be unlocked, closed slightly, reopened, and relocked. While the position indicated by the pointer was inaccurate and misleading, the handwheel on the valve indicates which way to turn to open the valve. Since November of 1990, the position of this valve has been checked twice during the quarterly performance of Administrative Procedure 2-0010123, "Administrative Control of Valves, Locks, and Switches," and weekly during Administrative Procedure 2-0010125A, "Surveillance Data Sheets,"



LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 25.1 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-430), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) St. Lucie Unit 2	DOCKET NUMBER (2) 05000389	LER NUMBER (6)			PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
		91	003	00	03	OF 04

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

CAUSE OF THE EVENT(Cont.)

Data Sheet 36, Weekly Valve Status Check. At all times it was reported to be Locked Open.

The root cause of the event is under investigation. A review of plant records, including operator logs, clearances, and Plant Work Orders, is being conducted. Personnel will be interviewed to determine the specific nature and cause of the error. An INPO Human Performance Enhancement System evaluation will also be performed.

ANALYSIS OF THE EVENT

This event is reportable under the requirements of 10CFR50.73.a.2.i.B, any condition or operation prohibited by Technical Specifications. Technical Specification 3.6.2.1 "Containment Spray System" requires two independent Containment Spray Systems to be OPERABLE with an OPERABLE Shutdown Cooling Heat Exchanger.

While the exact date of the mispositioning of the CCW outlet isolation valve to the 2A SDC HX is not yet known, November 29, 1990 is the last recorded date of a manipulation of the valve and is assumed to be the date of the mispositioning. Over a three day period in February 1991, the 2B Containment Spray System was taken out of service for routine maintenance and testing.

The SDC HX is not used until the recirculation phase for decay heat removal. The 2A Containment Spray System was always available to receive cool water from the Refueling Water Tank and deliver it to containment to mitigate a post-LOCA containment pressure rise. An alternate safety system for Containment Heat Removal, the Containment Cooling System, is being further evaluated for decay heat removal capability.

St. Lucie equipment sizing is such that the four containment fan coolers will provide the containment heat removal capability necessary to limit and reduce accident containment pressure and temperature during the recirculation phase. Additional analysis are in progress, assuming a single failure, to demonstrate that two containment fan coolers can also remove Large Break LOCA containment heat load during the recirculation phase. This result is expected because of the PSL containment design in which the free standing steel vessel will transfer heat to the environment.

FPL Engineering has performed a first order risk assessment of the CCW to the SDC HX valve being in the closed position. For a medium or large break LOCA, the frequency associated with the loss of the decay heat removal function only increases from 3.6E-8 per reactor year with a normal SDC HX lineup, to 5.8E-7 per reactor year with the shutdown heat exchanger isolated. With operator action to open the valve, the frequency is reduced to 1.5E-7 per reactor year.

Therefore, the health and safety of the public was not affected during this condition.



**LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION**

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION
REQUEST: 304 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE
REGULATORY AND REPORTS MANAGEMENT BRANCH (R-333), U.S. NUCLEAR REGULATORY
COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (R-
3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) St. Lucie Unit 2	DOCKET NUMBER (2) 05000389	LER NUMBER (6)		PAGE (3)	
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
		91	003	00	04 OF 04

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

CORRECTIVE ACTIONS

1. Operations restored SB-14365 to its proper position and verified the position of the redundant train's CCW outlet isolation valve.
2. Plant Work Orders were submitted to repair the faulty pointers on each valve and determine the root cause of the faulty pointer.
3. All Operations personnel were counseled on the use of the Standing Night Order. Operations is investigating further methods to enhance independent verification.
4. Operations performed the entire Weekly Valve Status Check on both Unit 1 and Unit 2. No further discrepancies were noted.
5. An INPO Human Performance Enhancement System evaluation will be performed on this event. The review will include human factors and work conditions.

ADDITIONAL INFORMATION

Affected Component Identification:

Henry Pratt 14" Butterfly Valve
Nuclear MK II with Manual Operator MDT-3 HW
Model Number 100178
Serial Number C140

Previous Similar Licensee Event Reports:

- 335-89-002 "Inoperable 1B Diesel Generator Due to Fuel Oil System Valve Misalignment"
- 335-87-012 "Loss of Component Cooling Water Redundancy--1A and 1B Component Cooling Water Cross-tie Valves in Open Position"