

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9707300101 DOC. DATE: 97/07/25 NOTARIZED: NO DOCKET #
 FACIL: 50-389 St. Lucie Plant, Unit 2, Florida Power & Light Co. 05000389
 AUTH. NAME AUTHOR AFFILIATION
 FREHAFFER, K. W. Florida Power & Light Co.
 STALL, J. A. Florida Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-005-00: on 970625, discovered that hot shutdown control panel shutdown cooling flow indicator, FI-3306 inoperable. Caused by weakness in work order & procedure used to repair FI-3306. Section meeting, w/I&C planners held. W/970725 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6
 TITLE: 50.73/50.9 Licensee Event Report (LER); Incident Rpt, etc.

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July 25, 1997

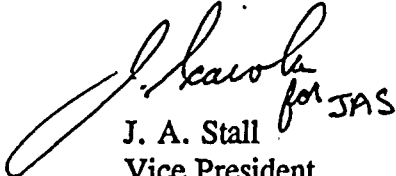
L-97-195
10 CFR 50.73

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

Re: St. Lucie Unit 2
Docket No. 50-389
Reportable Event: 97-005
Date of Event: June 25, 1997
Past Inoperability of FI-3306 Resulted in Operation
of Facility in a Manner Prohibited by Technical Specifications

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,



J. A. Stall
Vice President
St. Lucie Plant

JAS/KWF

Attachment

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

DE-2
1/1



9707300101 970725
PDR ADOCK 05000389
S PDR

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: 60.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INDUSTRY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20566-0001, 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

PAGE (3)

1 OF 5

TITLE (4)

Past Inoperability of FI-3306 Resulted in Operation of Facility in a Manner Prohibited by Technical Specifications

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
6	25	97	97	005	0	7	25	97		05000
									FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9) 1

POWER LEVEL (10) 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)

20.2201(b)	20.2203(a)(2)(v)	<input checked="" type="checkbox"/>	50.73(a)(2)(i)	50.73(a)(2)(viii)
20.2203(a)(1)	20.2203(a)(3)(i)	<input type="checkbox"/>	50.73(a)(2)(ii)	50.73(a)(2)(x)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	<input type="checkbox"/>	50.73(a)(2)(iii)	73.71
20.2203(a)(2)(ii)	20.2203(a)(4)	<input type="checkbox"/>	50.73(a)(2)(iv)	OTHER
20.2203(a)(2)(iii)	50.36(c)(1)	<input type="checkbox"/>	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 366A
20.2203(a)(2)(iv)	50.36(c)(2)	<input type="checkbox"/>	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME

K. W. Frehafer, Licensing Engineer

TELEPHONE NUMBER (Include Area Code)

(561) 468-4284

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
D	BP	FI	V153	N					

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE).

NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On June 25, 1997, Unit 2 was in Mode 1 at 100 percent power. The St. Lucie Quality Assurance organization was reviewing Nuclear Plant Work Orders, and discovered that the Hot Shutdown Control Panel Shutdown Cooling Flow Indicator, FI-3306, was inoperable from March 9, 1997 through May 9, 1997. At the time this event was discovered, the instrument was operable.

Maintenance was performed on FI-3306 on March 9, 1997 to repair a problem with the fluorescent display. The instrument was incorrectly calibrated and returned to service. This condition was not diagnosed until May 9, 1997. The apparent cause of this event was due to weaknesses in the work order and procedure used to repair FI-3306.

This event is considered reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) because the Shutdown Cooling Flow Indicator, FI-3306, was inoperable in excess of 30 days. This resulted in the facility being operated in a manner prohibited by Technical Specifications.

Corrective actions include: reviewing this event with I & C maintenance planners and I & C shop personnel; revising the procedure used to repair Versatile Instruments Measuring 2000 Bargraph Indicator displays to provide additional calibration and post maintenance test requirements; and updating the Total Equipment Data Base to include relevant calibration information.

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TEXT CONTINUATION

FACILITY NAME (1) St. Lucie Unit 2	DOCKET 05000389	LER NUMBER (6)			PAGE (3) 2 OF 5
		YEAR 97	SEQUENTIAL -- 005	REVISION -- 0	

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

DESCRIPTION OF THE EVENT

On June 25, 1997, Unit 2 was in Mode 1 at 100 percent power. The St. Lucie Quality Assurance organization was reviewing Nuclear Plant Work Orders, and discovered that the Hot Shutdown Control Panel Shutdown Cooling Flow Indicator, FI-3306, [EISS:BP:FI] was inoperable from March 9, 1997 through May 9, 1997.

The Hot Shutdown Control Panel Shutdown Cooling Flow Indicator, FI-3306, is a Versatile Instruments Measuring 2000 Bargraph Indicator display. The Versatile display consists of a front display board that includes the actual indicator bargraph and associated front board calibration components. The Versatile is configured to accept a representative input signal on the front display board for the required range, and the front display board is capable of being configured without breaking into the process loop. The front display board calibration range resistor, R2, is sized based on the input span of the process signal.

The original Versatile board for FI-3306 was installed in 1992. The instrument was supplied with an incorrect 80.6KΩ front calibration range resistor instead of a 7.5KΩ range resistor. A loop calibration was satisfactorily performed on the instrument. The incorrect front board range resistor was not discovered because the only time the resistor is cut into the circuit is when a front board calibration is being performed. A loop calibration effectively calibrates the front board without the need to perform a front board calibration.

St. Lucie experienced excessive dimming in a large percentage of the Versatile Indicators during an outage in December, 1995 which resulted in a wholesale change-out of many of the displays. Since many replacement displays would be required in a short amount of time, and few were available, procedure IMP-77.01 was developed and approved by the plant to allow modification of the available boards to meet the demands for replacement of defective components. This procedure directs the Journeymen to compare and document the components on each board, and use the components from the existing board to modify the new board, to meet the requirement for that particular application. Upon replacement of the required components, the new front board is installed into the Versatile and a front board calibration is performed.

On March 9, 1997, I & C Maintenance performed work to repair a dimming fluorescent display on FI-3306. The front display board was replaced. As required by procedure, when the front display board was replaced, the range resistor of the new board was replaced with the existing board's 80.6KΩ resistor. An 80.6KΩ resistor is sized to accept an input signal of 0.2 - 1.0 Vdc. However, this application required the use of a 7.5KΩ resistor to accept an input voltage of 0 - 10 Vdc. The front display board was subsequently calibrated to a range of 0 -5000 GPM for an input signal of 0.2 - 1.0 Vdc. Subsequent to this calibration, FI-3306 was placed back in service and checked against FR-3306 with a normal indication of no flow since the shutdown cooling system was secured at the time post maintenance testing was performed.

During the Spring 1997 Unit 2 refueling outage, operations noted that FI-3306 was indicating a flow of greater than 5000 gpm when the expected flow rate should have been 3200 gpm. A work order was initiated to trouble shoot the problem.

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DESCRIPTION OF THE EVENT (continued)

On May 9, 1997, an I & C technician discovered that the front display board had the incorrect front display board range calibration resistor installed. The wiring diagrams for FI-3306 indicated that the instrument is fed from voltage-to-voltage (E/E) converter FY-3306-3 which provides a 0 - 10 Vdc output that is fed directly to FI-3306. The R2 range resistor for this input voltage should be 7.5KΩ and not the 80.6KΩ resistor that was provided with the original Versatile. The front display board calibration resistor R2 was replaced with a 7.5KΩ resistor and a front board calibration was performed using an input voltage of 0 - 10 Vdc. A loop calibration was also satisfactorily performed to verify correct loop response. FI-3306 was placed back in service and a channel check was performed to verify that FR-3306 and FI-3306 were in agreement.

On June 25, Quality Assurance personnel discovered that FI-3306 was inoperable from March 9 through May 9 of 1997. A Condition Report was initiated, and this condition was determined on July 3, 1997 to be reportable.

CAUSE OF THE EVENT

The apparent cause of this event was due to weaknesses in the work order and Versatile Indicator modification procedure, IMP-77.01, used to repair FI-3306.

The work order was inadequate in that the procedural recommendations to reference the specific calibration procedure available for FI-3306 and to include a verified copy of the appropriate calibration data sheet were not performed.

The Versatile Indicator modification procedure IMP-77.01 was inadequate in that range resistor values, as well as the corresponding calibration range, were not required as part of the procedure. Additionally, the post maintenance test requirement were inadequate. The procedure does not dictate a channel functional test that would require an input signal as close to the process as possible.

Additionally, a Condition Report should have been initiated on May 9, 1997, as required by plant administrative procedures, when I & C personnel replaced the front display board calibration range resistor for FI-3306. Past operability of this flow instrument was in question, and a Condition Report was not initiated. Not initiating a Condition Report is attributed to personnel error.

ANALYSIS OF THE EVENT

This event is considered reportable pursuant to 10 CFR 50.73(a)(2)(i)(B) because the facility was operated in a manner prohibited by Technical Specifications. The Shutdown Cooling Flow Indicator, FI-3306, was inoperable in excess of 30 days, which is the Technical Specification 3.3.3.5 maximum allowed outage time for this instrument. FI-3306 provides shutdown cooling flow indication at the hot shutdown control panel. The hot shutdown control panel is a remote panel which is only used in the event the control room becomes inhabitable and must be evacuated. Plant operation from the hot shutdown control panel is

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

ANALYSIS OF THE EVENT (continued)

addressed in procedure ONOP 2.0030135, Control Room Inaccessibility. Per the above procedure, FI-3306 is used when adjusting shutdown cooling flow. The procedure requires that FI-3306 is utilized when adjusting FCV-3306 to maintain 3000 gpm shutdown cooling flow.

ASSESSMENT OF SAFETY SIGNIFICANCE

The noted problem with FI-3306 would have resulted in an indicated flow rate greater than the actual flow rate and thus could have caused operators to establish an actual shutdown cooling flow rate of less than 3000 gpm. Although this scenario is undesirable, it is not considered significant with respect to nuclear safety because:

- 1) inoperability of FI-3306 does not result in the inoperability of the shutdown cooling system;
- 2) the shutdown cooling system was operable during the period of time between March 9, 1997 and May 9, 1997;
- 3) Control Room indication of shutdown cooling flow (i.e., normal system operation) was not affected;
- 4) alternate means of shutdown cooling system performance monitoring was available from the hot shutdown control panel via indication of reactor coolant system cold leg temperature and shutdown cooling system temperature; and
- 5) upon indication of insufficient cooling by the shutdown cooling system, operators would take appropriate actions such as further opening of FCV-3306 to increase system flow or reestablishing plant cooldown via the steam generators.

Based on the above, FPL concludes that this event had no adverse effect on the health and safety of the public.

CORRECTIVE ACTIONS

FI-3306 was operable on June 25 at the time past inoperability was discovered.

1. A section meeting with all I&C Planners was held to review the requirements of the inclusion of calibration data in work order packages.
2. Shop meetings with all I&C personnel responsible for Versatile replacements were held to review this event to discuss the need to verify proper calibration and performance of an effective PMT. These meetings also stressed the need to initiate Condition Reports when past operability is in question for equipment important to safety.

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		97	-- 005	-- 0	

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

CORRECTIVE ACTIONS (continued)

3. Engineering determined the correct front display board calibration range resistor values, and provided this information to the I&C Procedure Writers for inclusion into IMP-77.01.
4. I&C Procedure Writers will include input range resistor R2 range values as provided by Engineering and revise IMP-77.01 to include this information. Additionally, the procedure shall be revised to include more effective PMT requirements upon completion of a Versatile front board replacement.
5. Engineering will review the Total Equipment Data Base (TEDB) for all installed Versatiles and ensure that the TEDB calibration information correct.

ADDITIONAL INFORMATION

Failed Components Identified

Equipment: Flow Indicator
 Manufacturer: Versatiles Measuring Instruments
 Model: 2000-01-D

Previous Similar Events - None