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ACCESSION NBR: 9504240135 DOC. DATE: 95/04/17 NOTARIZED: NO DOCKET #
 FACIL: 50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
 AUTH. NAME AUTHOR AFFILIATION
 LYONS, E.E. Florida Power & Light Co.
 SAGER, D.A. Florida Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-008-01: on 941104, inadvertent CIS caused by failed B instrument inverter concurrent w/channel D CIS in tripped condition. CIS was reset. W/950417 ltr.

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Florida Power & Light Company, P.O. Box 128, Fort Pierce, FL 34954-0128

April 17, 1995

L-95-107
10 CFR 50.73

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

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 94-008 - Revision 1
Date of Event: November 4, 1994
Inadvertent Containment Isolation Signal
Caused by Failure of Instrument Inverter.

The attached Licensee Event Report is being revised pursuant to the requirements of 10 CFR 50.73 to provide an update on the subject event.

Very truly yours,

CL Sager

D. A. Sager
Vice President
St. Lucie Plant

DAS/EJB

Attachment

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

9504240135 950417
PDR ADOCK 05000335
S PDR

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LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (MNBB 7714), 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.

FACILITY NAME (1) St. Lucie Unit 1		DOCKET NUMBER (2) 05000335	PAGE (3) 1 OF 4
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TITLE (4) Inadvertent Containment Isolation Signal (CIS) caused by failure of the B Instrument Inverter concurrent with channel D CIS in tripped condition.

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
11	04	94	94	--008--	1	4	17	95	Unit 2	05000389
									FACILITY NAME	DOCKET NUMBER
									N/A	

OPERATING MODE (9) 6	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)									
POWER LEVEL (10) 0	20.402(b)	20.405(c)	<input checked="" type="checkbox"/>	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					
	20.405(a)(1)(iii)	50.73(a)(2)(i)		50.73(a)(2)(viii)(A)	(Specify in Abstract below and in Text, NRC Form 366A)					
	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 Edward E. Lyons, Shift Technical Advisor	TELEPHONE NUMBER (Include Area Code) (407) 465-3550 x3151

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
B	EF	INVERTER	S250	Y					
B	IL	RADIATION DETECTOR	V115	Y					

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	<input checked="" type="checkbox"/>	NO					

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

The D channel of Containment Isolation Signal (CIS) had been placed in trip on 9/12/94 per Technical Specification 3.3.2.1. On 11/4/94 St. Lucie Unit 1 was in Mode 6 during a scheduled refueling outage. At 0615 an invalid/inadvertent Engineered Safety Features Actuation Signal (ESFAS) occurred on the CIS. The B Instrument Inverter tripped which deenergized the B channel of CIS. The CIS is a deenergize to actuate ESFAS signal. This resulted in two ESFAS channels (MB and MD) being in the tripped state which made up the required two of four logic for a CIS Actuation.

The cause of the event was CIS channel D being in the tripped state during Mode 6 concurrent with failure of the B Instrument Inverter. The root cause of the Instrument Inverter failure was a failure of the oscillator board.

Corrective actions were: 1) The CIS was reset. 2) The affected radiation detector channel was bypassed as allowed by Technical Specifications and subsequently returned to service after repairs. 3) The inverter was repaired and returned to service. 4) Operating procedures were changed to bypass certain measurement inputs of ESFAS during Modes 5 and 6 as allowed by Technical Specifications.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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St. Lucie Unit 1	05000335	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		94	--008--	1	

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

DESCRIPTION OF THE EVENT

On 9/10/94, with Unit 1 at 100% power, the channel D Containment Isolation Signal (CIS) (EIIS:JM) radiation monitor (EIIS:IL) was determined to be inoperable and declared out of service and bypassed. On 9/12/94, per Technical Specification 3.3.2.1, the channel D radiation detection portion of CIS was placed in trip. On 11/4/94, St. Lucie Unit 1 was in Mode 6 during a scheduled refueling outage. At 0615 an invalid/inadvertent Engineered Safety Features Actuation (ESFAS) (EIIS:JE) occurred on the CIS. The CIS is a deenergize to actuate ESFAS signal. The B Instrument Inverter (EIIS:EF) tripped which deenergized the B channel of CIS. This resulted in two channels (MB and MD) being in the tripped state which made up the required two of four logic for a CIS Actuation.

The CIS components actuated as required. To reset the CIS, the Instrument Inverter had to be reenergized. The Operations crew reenergized the B Instrument Inverter utilizing the Maintenance Bypass bus then CIS channel B was reset. The 1B Emergency Diesel Generator (EDG) (EIIS:EK) was secured at 0642. Both Unit 1 and Unit 2 Control Room Ventilation (EIIS:VI) systems went on recirculation as required.

It was initially reported that the 1B EDG had started after restoration of power to the B Instrument Inverter. Review of the Emergency Response Data Acquisition Display (ERDAD) Computer showed that the 1B EDG had in fact started as required on the CIS signal. Additionally the conditions of the event were recreated and it was confirmed that the CIS components actuated properly. A contributing factor to this reporting error is that the EDG start is not captured on the sequence of events recorder (only the EDG output breaker position is recorded). Since offsite power was unaffected by this event, by design, the EDG output breaker did not close.

CAUSE OF THE EVENT

The cause of the event was CIS channel D being in the tripped state during Mode 6 concurrent with failure of the B Instrument Inverter. The root cause of the Instrument Inverter failure was the failure of the oscillator board. The root cause of the 9/10/94 CIS channel D radiation detector failure is indeterminate. The CIS radiation channel had remained in the tripped condition due to ALARA concerns over the at power replacement of the associated detector located in the Reactor Containment Building (EIIS:NH).

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

ANALYSIS OF THE EVENT

This event is reportable as an actuation of the Engineered Safety Features (ESFAS) under 10CFR50.73 (a) (2) (iv). The A and B train CIS components actuated to their proper CIS position. The plant was in Mode 6 during a refueling outage with both the B train High Pressure Safety Injection pump and B train charging pump capable of taking suction from the Refueling Water Tank for Reactor Coolant makeup. Reactor Coolant makeup was not required as a result of this event. The CIS actuation did not interrupt shutdown cooling. Therefore, the health and safety of the public were not affected.

CORRECTIVE ACTIONS

- 1) Operations placed the B Instrument Inverter on the maintenance bypass bus and restored power to the B train instrumentation.
- 2) Operations reset the CIS.
- 3) Electrical Maintenance and Technical Staff confirmed that the CIS components properly actuated.
- 4) Operations placed the CIS radiation channel D in bypass, as allowed by the Technical Specifications in mode 6.
- 5) OP 1-0030127 "Reactor Plant Cooldown - Hot Standby to Cold Shutdown" was revised to include a step to place any ESFAS Channel that was in the tripped condition into the bypass condition as allowed by Technical Specifications.
- 6) Electrical Maintenance determined that a failed oscillator board was the root cause for the Instrument Inverter failure. EM replaced the oscillator board and returned the Instrument Inverter to service.
- 7) Instrument and Control replaced the failed CIS channel D radiation detector and ratemeter.
- 8) Operations has revised Administrative Procedure 0010120 "Conduct of Operations" to require the performance of the applicable Emergency Operating Procedure (EOP) 99 table to verify proper actuation of all ESFAS components during a spurious invalid actuation prior to restoration.
- 9) For generic concerns, a Safety Evaluation performed as a result of similar events concluded that simultaneously bypassing multiple ESFAS channels other than radiation detection for CIS during Modes 5 and 6 is acceptable for Reactor safety. This should prevent recurrence of similar events.

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ADDITIONAL INFORMATION

Component Failures

Instrument Inverter Oscillator board
Manufacturer: Solid State Controls
Model: SV12075/TS750NB-A/TS750MB

Radiation detector and ratemeter
Manufacturer: Victoreen Inc
Model: 857-3

Previous Similar Events

LER 335-90-004 "Inadvertent Partial Actuation of "A" train Containment Isolation and Containment Spray Systems due to equipment malfunction"

LER 335-90-003 "Spurious Containment Isolation Signal resulting from Radiation monitor spikes due to external Grid disturbance"

LER 389-84-009 "Inadvertent Containment Isolation Signal"