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FACIL:50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
AUTH.NAME AUTHOR AFFILIATION
HURCHALLA,J.A Florida Power & Light Co.
SAGER,D.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 93-009-00 on 931117,ESF actuation occurred due to subgroup actuation module trip.Cause under investigation. Corrective action:replaced & tested subgroup actuation module & reset actuation components.W/931117 ltr.

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P.O. Box 128, Ft. Pierce, FL 34954-0128

December 15, 1993

L-93-299
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: 93-009
Date of Event: November 17, 1993
Engineered Safety Features Actuation due to Subgroup Actuation Module Trip

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
Vice President
St. Lucie Plant

DAS/JWH/kw

Attachment

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

DAS/PSL #1026-93

200075

IE22
1/1

NRC FORM 366 (5-92) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
St. Lucie Unit 1	05000335	1 OF 4

TITLE (4) Engineered Safety Features Actuation due to Spurious Subgroup Actuation Module Trip

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	17	93	93	--009--	0	12	15	93	N/A	
									FACILITY NAME N/A	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	98

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

	20.402(b)		20.405(c)	X	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	TELEPHONE NUMBER (Include Area Code)
James A. Hurchalla, Shift Technical Advisor	(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
N/A	----	----	---	---						

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).		NO		06	30	94

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

On November 17, 1993, Unit 1 was in mode 1 and operating at 98% steady state power. One of four Engineered Safety Features Actuation System containment radiation measurement bistables was in trip due to maintenance. At 1336 Unit 1 experienced a trip of a single subgroup actuation module on one of two containment isolation system actuation channels. Utility licensed operators and the Instrument and Control system supervisor confirmed proper component actuation of this subgroup module. The subgroup actuation trip was determined to be spurious and the actuation module signal reset. The subgroup actuation module was replaced as a precaution and the new module was tested satisfactorily. The actuated components were then returned to their normal position.

The root cause of the containment isolation system subgroup actuation module trip is under investigation by Instrument and Control maintenance. The results of of that review will be provided in a supplement to this LER.

Corrective actions were: Replaced and tested the subgroup actuation module and reset the actuated components. Repairs were completed on the previously out of service containment radiation channel. The subgroup module is being sent to the vendor for testing. Further corrective actions will be based on these results.

DESCRIPTION OF THE EVENT

On November 17, 1993, St. Lucie Unit 1 was in mode 1 at 98% steady state power. The Engineered Safety Features Actuation System (ESFAS) (EIIS:JE), which normally requires two of four channels in trip for actuation, was in one out of three logic for the containment isolation system (CIS) (EIIS:JM). The MA containment radiation loop was out of service for repair and had been placed in trip per Technical Specification 3.3.2.1. The CIS as actuated by containment radiation consists of four independent measurement channels (MA,MB,MC,MD), each utilizing an independent bistable which passes a trip signal upon the measured parameter reaching its setpoint (See Figure 1). These four bistables are fed to two redundant actuation channels (SA,SB) where the subgroup actuation modules are located. The subgroup actuation modules pass a signal to their respective component actuation relays upon coincident signals from any two of four measurement bistables.

At 1336, utility licensed operators in the control room received an alarm for containment isolation system channel actuation concurrent with indication from the Reactor Turbine Generator Board (RTGB) (EIIS:JL) that a CIS actuation had occurred on the SB actuation channel. The licensed operators proceeded to check the ESFAS cabinet and observed that a single actuation module, the 4B CIS subgroup actuation module, on the SB ESFAS actuation cabinet was in trip. There were no abnormal indications on measurement parameters and none of the measurement bistables aside from the MA containment radiation bistable were in trip. The licensed operators performed a check of CIS actuated components per EOP-99 Table 2 "Containment Isolation Actuation Signal" and found that Reactor Cavity Sump (EIIS:BD) isolation valve LCV-07-11B and Reactor Drain Tank (EIIS:BD) isolation valve V6302 were closed in their CIS position. Additionally, the Unit 2 control room ventilation system had gone into the recirculation mode. Licensed operators and the Instrument and Control (I&C) system supervisor determined that this was the proper actuation for the 4B CIS actuation module. Since plant parameters were normal with no indication of reaching their ESFAS setpoint, the actuation was determined to be spurious and was reset at 1416. As a precautionary measure, the I&C department replaced the 4B CIS actuation module. At 1705 the replacement 4B CIS actuation module was tested satisfactorily and returned to service. All actuated components were then returned to their normal condition.

CAUSE OF THE EVENT

The root cause of the 4B CIS subgroup actuation module trip is under investigation by I&C maintenance. The results of that review will be provided in a supplement to this LER. No maintenance or surveillances were being performed at the time of the event. The CIS was in one out of three logic for containment radiation therefore making this parameter potentially more susceptible to spurious actuation. The 4B CIS subgroup actuation module which was replaced is being sent to the vendor, Consolidated Controls Corp. (C560), for failure analysis. Preliminary field checks and examination by the utility I&C maintenance did not identify any failures.

ANALYSIS OF THE EVENT

This event is reportable as an actuation of the Engineered Safety Features (ESFAS) under 10CFR50.73(a)(2)(iv). The actuation of both the "B" side reactor drain tank and reactor cavity sump containment isolation valves and the Unit 2 control room ventilation system going into recirculation are the only component actuations from the 4B CIS subgroup actuation module. Since the components actuated to their CIS position there was no effect on the operability of the containment isolation system. The actuations from the 4B CIS subgroup did not affect normal plant operations. Therefore the health and safety of the public were not affected by this event.

CORRECTIVE ACTIONS

1) Utility licensed operators verified that no other Engineered Safety Features Actuation System components changed state by performing Table 2 of EOP-99, which is the component actuation list for the CIS function.

2) I&C maintenance personnel replaced the 4B CIS subgroup actuation module as a precautionary measure and to facilitate root cause analysis.

3) Operations reset the affected components to their normal state.

4) Upon receipt of the replacement containment radiation measurement channel parts, I&C maintenance personnel expeditiously repaired the MA containment radiation channel restoring the two of four logic to the CIS.

5) I&C maintenance personnel performed a preliminary examination of the 4B CIS subgroup actuation module that was removed and found no indications of faulted subcomponents.

6) The suspect 4B CIS subgroup actuation module which was replaced is being sent to the vendor to determine if any defects exist. Further corrective actions will be based on the results of the vendor analysis.

ADDITIONAL INFORMATION

Component Failures

To Be Determined

Previous Similar Events

LER 335-90-003 "Spurious Containment Isolation Signal Actuation Resulting from Radiation Monitor Noise Spike due to External Grid Disturbance"

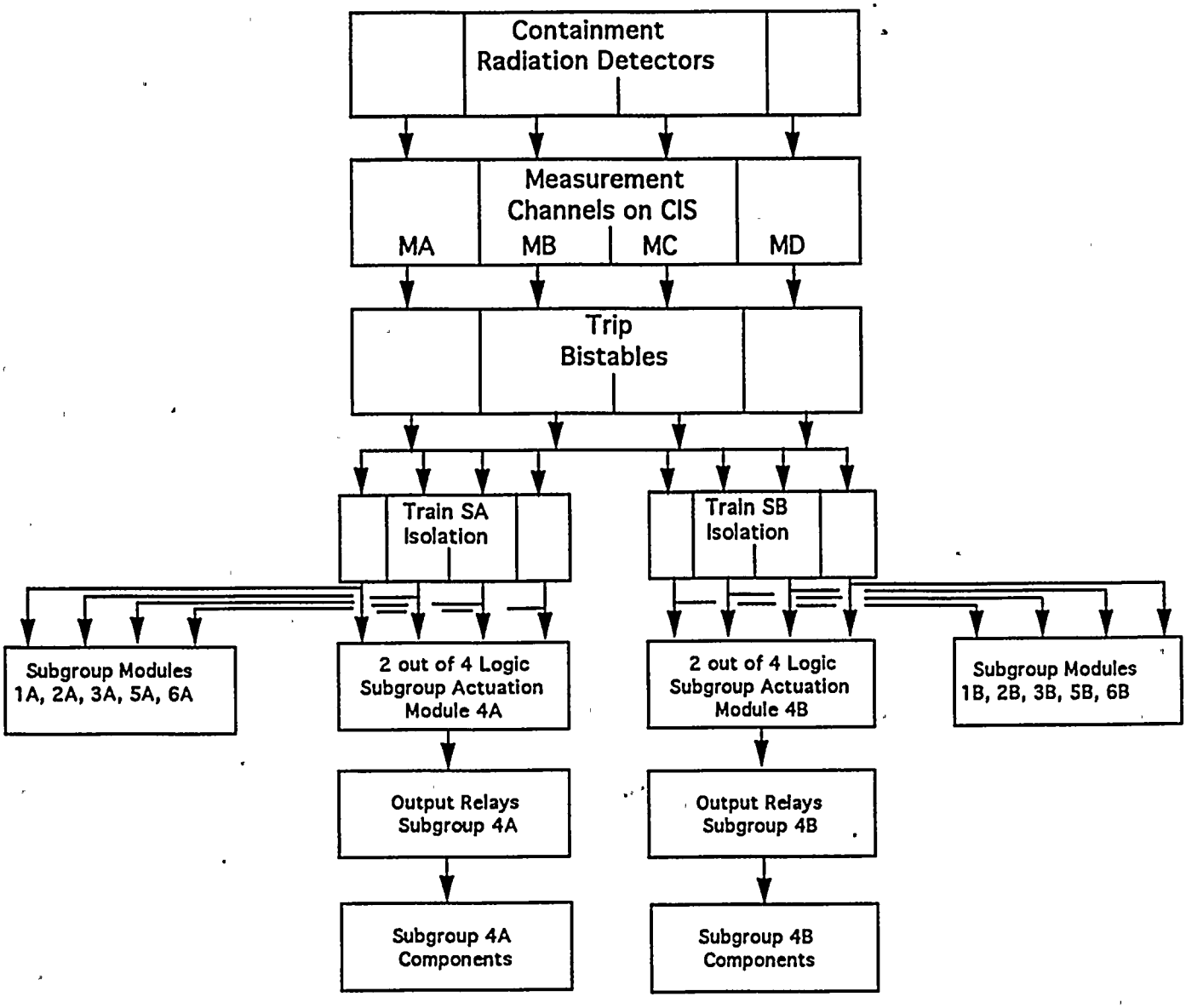

FIGURE ONE - CONTAINMENT ISOLATION SYSTEM