CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9802110012 DOC.DATE: 98/02/03 NOTARIZED: NO DOCKET #
FACIL:50-335 St. Lucie Plant, Unit 1, Florida Power & Light Co. 05000335
AUTH.NAME AUTHOR AFFILIATION
FREHAFER,K.W. Florida Power & Light Co.
STALL,J.A. Florida Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 98-001-00:on 980104,inadvertent RPS actuation occurred due to personnel error.Caused by procedural inadequacies & inadequate self-checking by licensed utility personnel. Placards have been placed in CRs.W/980203 ltr.

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

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CATEGORY 1 DOCUMENT

Florida Power & Light Company, 6351 S. Ocean Drive, Jensen Beach, FL 34957

February 3, 1998

L-98-018
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: 98-001
Date of Event: January 4, 1998
Inadvertent RPS Actuation Due to Personnel Error

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73.

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

IE22

NRC FORM 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 04/30/98

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 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 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)

Inadvertent RPS Actuation Due to 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 NAME	DOCKET NUMBER
1	4	98	98	001	0	2	3	98	N/A	05000
									FACILITY NAME	DOCKET NUMBER
										05000

		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)					
OPERATING MODE (9)	3		20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
POWER LEVEL (10)	0		20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
			20.2203(a)(2)(i)		20.2203(a)(3)(ii)		50.73(a)(2)(iii)		73.71
			20.2203(a)(2)(ii)		20.2203(a)(4)	X	50.73(a)(2)(iv)		OTHER
			20.2203(a)(2)(iii)		50.36(c)(1)		50.73(a)(2)(v)		Specify in Abstract below or in NRC Form 366A
			20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
K. W. Frehafer, Licensing Engineer	(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
A	JC	N/A	N/A	N/A						

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

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

On January 4, 1998, Unit 1 was at zero percent power, in Mode 3, with pressurizer pressure less than 1750 psig. A reactor plant heatup to normal operating temperature and pressure following refueling was in progress. The reactor trip breakers were closed and all reactor control element assemblies were fully inserted. The operators were directed to remove the zero power mode bypass keys for each channel of the reactor protection system once the fourth reactor coolant pump was started. The reactor trip breakers opened immediately after the reactor protection system 'C' channel zero power mode bypass was unbypassed.

This event was caused by procedural inadequacies and inadequate self-checking by licensed utility personnel. The procedure did not address plant conditions necessary to ensure the reactor protection system thermal margin/low pressure trip setpoint was below actual system pressure when the zero power mode bypass keys were operated. During the event, plant conditions would have set the thermal margin/low pressure trip setpoint at 1887 psia, and actual reactor coolant system pressure was approximately 1740 psia when the reactor protection system zero power mode bypass was unbypassed. Additionally, the operator continued with the unbypassing of the zero power mode bypass and did not give the crew time to review the validity of the alarms and ensure all conditions were satisfactory prior to completing the procedure.

Corrective actions included procedural enhancements, counseling the operator, and crew briefings on the event.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL	REVISION	
ST. LUCIE UNIT 1	05000335	98	-- 001 --	0	2 OF 4

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

DESCRIPTION OF THE EVENT

On January 4, 1998, Unit 1 was at zero percent power, in Mode 3, with pressurizer pressure less than 1750 psig. A reactor plant heatup to normal operating temperature and pressure following refueling was in progress in accordance with Normal Operating Procedure NOP-1-0030121, "Reactor Plant Heatup - Cold to Hot Standby." Reactor Coolant System (RCS) temperature was approximately 510 °F and pressure was approximately 1700 psia. Reactor Trip Circuit Breakers (TCBs) [EIIS:JC:BKR] were closed and all reactor Control Element Assemblies (CEAs) [EIIS:AA] were fully inserted. The fourth Reactor Coolant Pump (RCP) [EIIS:AB:P], 1A1, was successfully started in accordance with step 6.5.12 of the heatup procedure.

Step 6.5.13 directs an operator to remove the Zero Power Mode Bypass (ZPMB) [EIIS:JC:33] keys for each channel of the Reactor Protection System (RPS) [EIIS:JC] once the fourth RCP is started. At 1050, the reactor operator turned the ZPMB key from bypass to off for RPS channel 'A' and the Thermal Margin/Low Pressure (TM/LP) trip locked in. The reactor operator continued with the procedure and turned the ZPMB key from bypass to off for RPS channels 'B', 'C', and 'D' in sequence. It was then noted that the TCBs had opened, and it was confirmed via the Sequence of Events Recorder (SOER) [EIIS:IQ] that the TCBs had opened immediately after RPS channel 'C' was unbypassed. The operators immediately returned the ZPMB keys back to the bypass position.

CAUSE OF THE EVENT

This event was caused by procedural inadequacies in procedure NOP 1-0030121, "Reactor Plant Heatup - Cold to Hot Standby." Inadequate self-checking by licensed utility personnel contributed to this event.

Procedure NOP 1-0030121, "Reactor Plant Heatup - Cold to Hot Standby," step 6.5.13, directs the operators to place the ZPMB key from bypass to off after the fourth RCP is started. However, the procedure did not address all trip functions potentially bypassed by the ZPMB key.

The ZPMB switch is a key operated switch, one for each RPS channel. The ZPMB allows the RPS low flow and TM/LP trips to be bypassed for subcritical testing of control element drive mechanisms. This RPS bypass is automatically removed when reactor power level increases above one percent power.

The low flow trip is provided to protect the core against Departure from Nucleate Boiling (DNB) in the event of a coolant flow decrease. The low flow trip is a function of measured differential pressure across the steam generators and the number of operating RCPs.

CAUSE OF THE EVENT (cont'd)

The TM/LP trip is provided for two purposes. The low pressurizer pressure portion of the trip functions to trip the reactor in the event of a loss of coolant accident. The thermal margin portion of the trip, in conjunction with the low reactor coolant flow trip, is designed to prevent the reactor core safety limit on DNB from being violated during anticipated operational occurrences. The TM/LP trip setpoint is either a calculated pressure value based on RCS temperature, power and flow, or a minimum biased pressure value of 1887 psia.

During the event, four RCPs were operating (ensuring that a low flow trip would not be present), but existing plant conditions set the TM/LP trip setpoint at the minimum biased pressure value of 1887 psia. The ZPMB keys were placed from bypass to off while RCS pressure was approximately 1740 psia, which resulted in the TM/LP trip and opening the reactor TCBs.

Additionally, personnel error by the operator and operating crew resulted in not investigating the cause of the TM/LP alarms when they were received as the RPS channel ZPMB keys were sequentially placed from bypass to off. The operator continued with the procedure and did not give the crew time to review the validity of the alarms and ensure all conditions were satisfactory prior to completing the procedure. The TCBs opened when the third RPS channel ZPMB key was placed from bypass to off, which completed the coincidence requirements for the TM/LP reactor trip.

St. Lucie Plant management expectations for licensed operator response to unexpected control room alarms are that the licensed operator acknowledging the alarm announce the alarm to control room personnel as "unexpected," that control room activities stop to permit investigation of the alarm, and that actions are taken in accordance with plant alarm response procedures to determine the cause of the alarm. Such activities did not occur during this event.

ANALYSIS OF THE EVENT

This event is reportable as a valid actuation of the RPS per 10 CFR 50.73(a)(2)(iv). Since removing the bypass from the ZPMB restored the capability of the TM/LP trip circuitry to respond to an RCS low pressure condition, this event is considered a valid RPS actuation based on actual plant conditions. It was reported to the NRC as a four hour ENS notification at 1708 hours on January 5, 1998.

ASSESSMENT OF SAFETY SIGNIFICANCE

The reactor was shutdown in Hot Standby prior to the event. Although the TCBs were opened by a valid RPS signal, the reactor trip signal did not result in any physical change to core reactivity because the CEAs were fully inserted prior to the trip signal. Therefore, this event had no impact to the health and safety of the public.

CORRECTIVE ACTIONS

1. Procedure changes to NOP 1-0030121 and NOP 2-0030121, "Reactor Plant Heatup - Cold to Hot Standby," were initiated to ensure that after the fourth RCP is started, the ZPMB bypass keys remain in bypass until pressure is greater than 1900 psia and no trips are present.

2. The operator was counseled, and the operator conducted briefings for each operating crew to describe the event in detail, including the seriousness of the event, the use of self checking, and the need for involvement from the operating crew when alarms are received.

3. Placards have been placed in the control rooms that require either of the following conditions be met prior to placing the ZPMB keys from bypass to off: a) the reactor TCBs open, or b) the unit at normal operating temperature and pressure.

ADDITIONAL INFORMATION

Similar Events

None

Failed Components Identified

None