Florida Power
CORPORATION
Crystal River Unit 3
Docket No. 50-302

January 21, 1991

3F0191-13

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

Subject: Licensee Event Report (LER) 89-022-01

Dear Sir:

Enclosed is Licensee Event Report (LER) 89-022-01 which is submitted in accordance with 10 CFR 50.73.

This supplement includes additional information and provides the status of the subject item. The expected submittal date for this supplement was predicated on the originally scheduled date for Refuel VII. The delay in submission of this report was the result of the Refuel VII schedule change, and a delay in the engineering evaluation of testing conducted during the Refuel VII outage.

Sincerely,

G. L. Boldt
Vice President, Nuclear Production

WLR:mag

Enclosure

xc: Regional Administrator, Region II
Project Manager, Region II
Senior Resident Inspector

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NRC FORM 366 (6-89) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92
ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), 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)	DOCKET NUMBER (2)	PAGE (3)
CRYSTAL RIVER UNIT 3	0 5 0 0 0 3 0 2	1 OF 0 3

TITLE (4) Unknown Cause Leads to Erroneous Indication of Loss of Main Feedwater Pumps and Results in Manual Engineered Safety Feature Actuation

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)
										N/A	0 5 0 0 0
0 6	1 4	8 9	8 9	—	0 2 2	— 0 1	0 1	2 1	9 1	N/A	0 5 0 0 0

OPERATING MODE (9)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)					
3	20.402(b)	20.405(c)	X	50.73(a)(2)(iv)	73.71(b)	
POWER LEVEL (10) 0 0 0	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	TELEPHONE NUMBER
	AREA CODE
W. K. Bandhauer, Nuclear Operations Superintendent	9 0 4 — 7 9 5 - 6 4 8 6

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	

SUPPLEMENTAL REPORT EXPECTED (14)		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		0 3	3 1	9 2

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

On June 14, 1989, Crystal River Unit 3 was in Mode 3 (Hot Standby) nearing the end of a maintenance outage. One Main Feedwater Pump (MFWP) was supplying feedwater to the Once Through Steam Generators (OTSG's) with the other MFWP in standby (latched). A refueling interval Engineered Safeguards (ES) actuation surveillance was in progress. At 1910, during the ES surveillance, a Control Board Operator observed indications that both MFWP's had tripped. In accordance with plant procedures, he manually actuated Emergency Feedwater and complied with those plant procedures. Shortly thereafter it was noted that the MFWP's had not actually tripped. The status of the Main Feedwater Pumps was determined to be normal and EFW was returned to normal standby status in accordance with plant procedures. This event was a manual operator response to an indicated loss of both MFWP's. The loss of indication was caused by an interruption of power to the supervisory circuit. This is an expected result of the Surveillance Test, but was not included as a note or caution in the procedure. The cautionary note has been added. Further investigation will be conducted to determine the cause and appropriate corrective actions will be developed and implemented for the remaining anomalous response in the feedwater flow circuit.

EVENT DESCRIPTION

On June 14, 1989, Crystal River Unit 3 was in Mode 3 (Hot Standby) nearing the end of a maintenance outage. One Main Feedwater Pump [SJ,P] (MFWP) was latched and running to supply feedwater to both Once Through Steam Generators (OTSG's) [AB,SG], with the other MFWP latched and running in standby. Surveillance Procedure SP-417, Refueling Interval Integrated Plant Response To an Engineered Safeguards [JE] Actuation, was in progress. This Surveillance Procedure had been completed for the "A" Engineered Safeguards (ES) train and preparations were complete for beginning surveillance on the "B" ES train. The test consists of introducing an ES actuation signal, followed shortly by an ES 4160 Volt ES Bus [EB,BU] undervoltage signal. This checks both the ES actuation logic and the ES 4160 Volt Bus block loading sequence.

At 1900 testing commenced on the "B" ES train. Response to the ES actuation signal was normal. When the ES 4160 Volt Bus undervoltage signal was introduced and electrical bus realignment began, the Control Board Operator (utility licensed personnel) noted that both MFWP's appeared to be tripped. All MFWP supervisory indicating lights [JK,IL] had gone out, differential pressure indication between the MFWP discharge and OTSG pressure had dropped from approximately 80 psig to zero and start up feedwater flow instruments [SJ,FI] indicated zero flow to both OTSG's. In addition, several anomalous indications were noted on the Integrated Control System (ICS)[JA] feedwater control stations. Based on these indications, the Control Board Operator announced a loss of both MFWP's, manually initiated Emergency Feedwater (EFW) [BA] in accordance with the plant procedure governing loss of both MFWP's, and complied with that procedure. This event is reportable under 10 CFR 50.73.a.2.iv as a manual actuation of an Engineered Safety Feature (ESF). Following actuation of EFW, it was noted that all MFWP and ICS indications had returned to normal. Both MFWP's were still latched and all MFWP and ICS indications were as expected. Following a careful review of the status of the MFWP and ICS indications, with no discrepancies noted, EFW was secured. The Emergency Feedwater Initiation and Control System [JE] was reset to the normal standby status, in accordance with plant procedures, at 1920.

CAUSE

This ESF actuation was a manual operator response to an indicated loss of both MFWP's. This operator response was directed by plant procedures.

The loss of indication was caused by an interruption of power to the supervisory circuit. With the exception of the MFWP supervisory indicating lights, the cause of the indicated loss of both MFWP's has not been conclusively determined. Utility engineering personnel immediately interviewed the Control Board Operators and reviewed the MFWP and ICS power sources. It was determined that the MFWP supervisory indicating lights are powered from a bus which was temporarily deenergized during the "B" ES electrical bus realignment and, therefore, the temporary loss of the supervisory indicating lights is expected. All other indications noted by the Control Board Operator are powered from ICS or Non Nuclear Instrumentation (NNI) power supplies.

These power supplies are fed from vital buses [EF,BU]. There was no indication of loss of any of these vital buses, nor was any ICS or NNI power supply breaker [JA,BKR] opened during the "B" ES electrical bus realignment. Further investigation will be conducted to determine conclusively the reason for the remaining anamolous response in the feedwater flow circuit.

EVENT EVALUATION

Manual operator action, directed by plant procedures, resulted in actuation of the Emergency Feedwater System. The main feedwater pumps did not trip during this event, so that both main and emergency feedwater were available. Therefore, secondary cooling was not jeopardized and nuclear safety remained unaffected. This particular event could not occur at power since the Surveillance procedure being performed is a refueling interval test which must be performed while the plant is shut down. However, the scenario being simulated by the Surveillance Procedure (ES actuation followed by ES 4160 Volt Bus undervolatage) could be initiated from power operations. In this scenario either main or emergency feedwater could be used to combat the casualty, and the health and safety of the public would not be compromised.

CORRECTIVE ACTION

Investigation has shown that the temporary loss of MFWP supervisory indicating lights is expected during "B" ES electrical bus realignment and therefore no corrective action is required, however a precaution has been added to the procedure to assure operators are aware of the temporary loss of indication. Investigation into the loss of ICS indications is ongoing and corrective actions will be taken to address the findings of that investigation. The results of this investigation will be submitted as a supplement to this LER at a later date.

PREVIOUS SIMILAR EVENTS

Crystal River Unit 3 has reported 28 Engineered Safety Feature actuations. This is the first event involving manual actuation following erroneous indication of MFWP's being tripped.