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 (3150-01..4), 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)
CRYSTAL RIVER UNIT 3	05000302	1 OF 5

TITLE (4)

Thermal Overload Relays in Manual Reset Position Resulted in Operation Outside of the Design Basis

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
10	24	97	97	-- 036 --	00	11	21	97	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
		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)	X 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)	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)
Patrick M. Peterson, Sr. Regulatory Specialist	(352) 795-6486

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
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On October 24, 1997, Florida Power Corporation's (FPC) Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). During a walkdown of the High Pressure Injection (HPI) system, FPC discovered that the overload relays for the Makeup and Purification (MU) System HPI valves, MUV-23, MUV-24, MUV-25, and MUV-26, were not in the automatic reset mode of operation. The CR-3 Final Safety Analysis Report (FSAR) states "Automatic overload reset is provided." The risk to the public health and safety was not significantly increased because the overload relays set in the manual position did not affect the normal operation of the MUVs. The requirement for the Emergency Core Cooling System (ECCS) Motor Operated Valves (MOVs) to have automatic reset capability was not included in the development of the modification. FPC will review and reset, as necessary, the ECCS MOV overload relays to assure the correct setting is used. This action will be completed under the CR-3 12 week rolling work schedule process. The Nuclear Engineering Procedures (NEPs) were revised to enhance the development and verification of designs. FPC has reported two previous LERs regarding thermal overload relay settings.

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

DESCRIPTION

On October 24, 1997, Florida Power Corporation's (FPC) Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). During a walkdown of the High Pressure Injection (HPI) [BQ] system, FPC discovered that the overload relays [RLY] for the Makeup and Purification (MU) [CS] System HPI valves MUV-23, MUV-24, MUV-25, and MUV-26 were not in the automatic reset mode of operation.

The CR-3 Final Safety Analysis Report (FSAR) states, "...the Emergency Core Cooling System (ECCS) ...electric motor operators for valves are designed to operate under emergency service conditions, and are capable of operating at 20 percent below the rated voltage. Overload protection is provided for safety related motor operated valves (MOVs) for motor protection. System voltage transients during an emergency condition could cause momentary motor stalling, but are not severe enough to cause operation of the overload elements. Automatic overload reset is provided." The overload relays for HPI valves MUV-23, MUV-24, MUV-25, and MUV-26 are located in Motor Control Center (MCC) [MCC] MUMC-1 and MUMC-2.

This condition was determined to be reportable pursuant to 10CFR50.73(a)(2)(ii)(B), as a condition outside of CR-3's design basis.

EVALUATION

The risk to the public health and safety was not significantly increased because the overload relays set in the manual position did not affect the normal operation of the MUVs. The overload elements sense abnormal operation of the motor and open the motor control circuit through the overload relay. The MOV would fail in the "as-is" position when the overload relay actuates (there is one overload relay per MUV). If the overload relays tripped while balancing the HPI flow during a Loss of Coolant Accident (LOCA), the MUVs could not have been operated until the reset switch was activated locally at the MCC.

CAUSE

The overload relays were installed as part of a modification, in 1979, to provide two sources of power to MUV-23, MUV-24, MUV-25, and MUV-26. The relays have been set in the manual reset mode since their original installation. The requirement for the ECCS MOVs to be in the automatic reset mode was not included in the development of the modification. Plant drawings were also not properly revised to reflect the modification.

IMMEDIATE CORRECTIVE ACTIONS

On November 1, 1997, FPC set the overload relays to the automatic reset position for MUV-23, MUV-24, MUV-25, and MUV-26.

CORRECTIVE ACTION

The drawings for MCC MUMC-1 and MUMC-2 will be revised to include the overload relays and the settings of the overload relays by March 31, 1998. FPC will review and reset, as necessary, other ECCS MOV overload relays to assure the correct setting is used. This action will be completed under the CR-3 12 week rolling work schedule process. FPC will review and reset, as necessary, the overload relays in other MCCs by March 31, 1998.

ACTIONS TO PREVENT RECURRENCE

Subsequent to the modification of the MCCs, Nuclear Engineering Procedures (NEPs) were revised to enhance the development and verification of designs. NEP-261, "Design Verification," requires the Verification Engineers to assure that modifications provide sufficient detail for purpose, method, assumptions, design inputs, and references.

PREVIOUS SIMILAR EVENTS

FPC has reported two previous LERs regarding thermal overload relay settings. LER 50-302/92-019-00 discussed undersized thermal overload elements. LER 50-302/89-033-01 discussed incorrect relay settings.

ATTACHMENTS

Attachment 1 - Abbreviations, Definitions, and Acronyms
Attachment 2 - Commitments

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ATTACHMENT 1

ABBREVIATIONS, DEFINITIONS, AND ACRONYMS

10CFR	Title 10 of the Code of Federal Regulations
CR-3	Crystal River Unit 3
ECCS	Emergency Core Cooling System
FPC	Florida Power Corporation
FSAR	Final Safety Analysis Report
HPI	High Pressure Injection
LER	Licensee Event Report
LOCA	Loss of Coolant Accident
MCC	Motor Control Center
MOV	Motor Operated Valve
MU	Make and Purification System
MUV	Makeup Valve
NEP	Nuclear Engineering Procedures

Note: Improved Technical Specifications terms appear in capitalization in the text of the LER. EIIS Codes appear in square brackets. Defined terms/acronyms/abbreviations appear in parentheses when first used.

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ATTACHMENT 2

RESPONSE SECTION	COMMITMENT	DUE DATE
Page 3	The drawings for MCC MUMC-1 and MUMC-2 will be revised to include the overload relays and the settings of the overload relays.	March 31, 1998
Page 3	FPC will review and reset, as necessary, other ECCS MOV overload relays to assure the correct setting is used.	This action will be completed under the CR-3 12 week rolling work schedule process.
Page 3	FPC will review and reset, as necessary, the overload relays in other MCCs.	March 31, 1998