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

July 25, 1997
3F0797-22

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555-0001

Subject: LICENSEE EVENT REPORT (LER) 50-302/97-004-01

Gentlemen:

Please find the enclosed Licensee Event Report (LER) 50-302/97-004-01 which discusses thermal relief valves inside containment that do not meet the requirements for design basis accidents. This report is being submitted pursuant to 10 CFR 50.73(a)(2)(ii).

Sincerely,

JJHolden

J. J. Holden,
Director
Nuclear Engineering and Projects

IE22

JJH/pmp

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

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

APPROVED BY OMB NO. 3150-0104

EXPIRES 04/30/98

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 RELIEF VALVES INSIDE CONTAINMENT DO NOT MEET THE REQUIREMENTS FOR DESIGN BASIS ACCIDENTS

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
02	07	97	97	-- 004 --	01	07	25	97	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9): 5

POWER LEVEL (10): 000

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)
	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 February 7,1997, Florida Power Corporation's (FPC) Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). FPC performed a design review of the Nuclear Service Closed Cycle Cooling Water (SW) and Industrial Cooling Water (CI) systems in accordance with Generic Letter 96-06. Based on the review, FPC determined the selection of the thermal relief valves did not take into consideration the back pressure inside the reactor building (RB) during main steam line break (MSLB) and loss of coolant accident (LOCA) conditions. The engineering evaluation concluded that the containment integrity was not adversely affected due to the relief valves in the SW and CI systems. The conditions inside the RB during a MSLB and LOCA were not adequately considered during the selection of the thermal relief valves due to personnel error. No immediate corrective actions were necessary because CR-3 was in MODE 5. FPC will issue a Modification Approval Record (MAR) to replace the existing thermal relief valves and reinstall the inappropriately removed relief valves in the SW and CI systems inside the RB by November 20, 1997. Nuclear Engineering Procedure NEP-213, "Design Analysis Calculations," has been revised to include a requirement for a review of the design by the system engineer, plant operations, and other organizations, as applicable. No other LERs have been issued related to thermal relief valves in the SW and CI systems.

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	97	- 004 -	01	2 OF 5

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

EVENT DESCRIPTION

On February 7,1997, Florida Power Corporation's (FPC) Crystal River Unit 3 (CR-3) was in MODE 5 (COLD SHUTDOWN). FPC performed a design review of the Nuclear Service Closed Cycle Cooling Water (SW) [BI] and Industrial Cooling Water (CI) [CC] systems in accordance with Generic Letter 96-06. Based on the review, FPC determined the selection of the thermal relief valves [RV] did not take into consideration the back pressure inside the reactor building (RB) [NH] during main steam line break (MSLB) and loss of coolant accident (LOCA) conditions.

A Modification Approval Record (MAR) 80-04-13-01, was issued and implemented to remove redundant relief valves in the cooling loop of the SW system. MAR G91-08-25-01 was issued and implemented to replace existing thermal relief valves in the SW system inside the RB with Nupro Thermal Relief Valves. However, the Nupro valve relief settings were not set based on the back pressure on the valves that may exist in the RB during a LOCA or MSLB. The higher back pressure would have resulted in the valves not opening at the set relief pressure point.

FPC determined this is a condition outside the design basis, and is issuing this report in accordance with 10CFR50.73(a)(2)(ii)(B).

EVENT EVALUATION

Currently, minimal safety significance is associated with the existing conditions. Containment integrity is required by the Improved Technicial Specification for MODES 1-4 and MODE 6. CR-3 is currently in MODE 5.

Design Engineering performed an evaluation of the material, thermal relief valves, components, and calculations for the SW and CI systems inside the reactor building. Based on the engineering evaluation, containment integrity was not adversely affected. However, inappropriate removal of the redundant relief valves could have resulted in inadequate overpressurization protection of the SW system.

The temperatures and pressures in the RB due to a LOCA or MSLB would not adversely impact the ability for the SW and CI systems to perform their intended functions. An evaluation of the material in the SW and the CI systems determined the material would withstand the temperature and pressure in the RB during a LOCA and MSLB, and thereby maintain system integrity.

CAUSE

The conditions inside the RB during a MSLB and LOCA were not adequately considered during the selection of thermal relief valves for the SW and CI systems due to personnel error. The error included an incorrect conclusion that the thermal relief valves were redundant in the SW system, inappropriate selection of the replacement thermal relief valves, and the lack of verification of the conditions expected in the RB during a LOCA or MSLB.

IMMEDIATE CORRECTIVE ACTIONS

No immediate corrective actions were necessary because CR-3 was in MODE 5. Containment integrity is required for MODES 1 thru 4 and MODE 6.

ADDITIONAL CORRECTIVE ACTIONS

FPC will implement a MAR to replace the existing thermal relief valves and reinstall the inappropriately removed relief valves in the SW and CI systems inside the RB by November 20, 1997.

ACTION TO PREVENT RECURRENCE

Nuclear Engineering Procedure NEP-213, "Design Analysis Calculations," has been revised to include a requirement for a review of the design by the system engineer, plant operations, and other organizations, as applicable.

PREVIOUS SIMILAR EVENTS

This is the first report regarding the SW and CI thermal relief valves and their associated material design. LER 94-014 detailed a condition where an inconsistency existed between the design and operation of the plant relative to SW system reactor building fan/cooler heat loads during a postulated design basis LOCA. Certain operating scenarios establish a condition which may cause reduced component flows and the allowable SW supply temperature to be exceeded for a short period of time post LOCA.

ATTACHMENTS

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

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	97	- 004 -	01	4 OF 5

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

ATTACHMENT 1 - ABBREVIATIONS, DEFINITIONS, AND ACRONYMS

LER	Licensee Event Report
FPC	Florida Power Corporation
CR-3	Crystal River Unit 3
10CFR	Title 10 of the Code of Federal Regulations
SW	Nuclear Service Closed Cycle Cooling
CI	Industrial Cooling Water
RB	Reactor Building
MSLB	Main Steam Line Break
LOCA	Loss Of Coolant Accident
MAR	Modification Approval Record

Note: Improved Technical Specifications terms appear in capitalization in the text of the LER. EIIS Codes appear in square brackets. Abbreviations appear in parentheses for the first use.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	97	- 004 -	01	5 OF 5

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

ATTACHMENT 2

RESPONSE SECTION	COMMITMENT	DUE DATE
Page 3	FPC will issue a MAR to replace the existing thermal relief valves and re-install the inappropriately removed relief valves in the SW and CI systems inside the RB.	November 20, 1997