Progress Energy

Crystal River Nuclear Plant
Docket No. 50-302
Operating License No. DPR-72

Ref: 10 CFR 50.73

December 8, 2003
3F1203-04

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

Subject: LICENSEE EVENT REPORT 50-302/03-004-00

Dear Sir:

Please find enclosed Licensee Event Report (LER) 50-302/03-004-00. The LER discusses redundant channels of a post-accident monitoring function not being operable due to reversed power supplies. This condition is prohibited by the Crystal River Unit 3 Improved Technical Specifications and is being submitted pursuant to 10CFR50.73(a)(2)(i)(B).

No new regulatory commitments are made in this letter.

If you have any questions regarding this submittal, please contact Mr. Sid Powell, Supervisor, Licensing and Regulatory Programs at (352) 563-4883.

Sincerely,

James H. Terry
Manager, Engineering
Crystal River Nuclear Plant

JHT/dwh

Enclosure

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

Progress Energy Florida, Inc.
Crystal River Nuclear Plant
15760 W. Powerline Street
Crystal River, FL 34428

IE22

NRC FORM 366 (7-2001)

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

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

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
CRYSTAL RIVER UNIT 3	05000 302	1 OF 6

4. TITLE

Redundant Channels Of A Post-Accident Monitoring Function Not Operable Due To Reversed Power Supplies

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
10	17	2003	03	- 004	- 00	12	08	2003	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	NO
10. POWER LEVEL	0%

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

	20.2201(b)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(B)		50.73(a)(2)(ix)(A)
	20.2201(d)		20.2203(a)(4)		50.73(a)(2)(iii)		50.73(a)(2)(x)
	20.2203(a)(1)		50.36(c)(1)(i)(A)		50.73(a)(2)(iv)(A)		73.71(a)(4)
	20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		50.73(a)(2)(v)(A)		73.71(a)(5)
	20.2203(a)(2)(ii)		50.36(c)(2)		50.73(a)(2)(v)(B)		OTHER Specify in Abstract below or in NRC Form 366A
	20.2203(a)(2)(iii)		50.46(a)(3)(ii)		50.73(a)(2)(v)(C)		
	20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(D)		
	20.2203(a)(2)(v)	X	50.73(a)(2)(i)(B)		50.73(a)(2)(vii)		
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)		50.73(a)(2)(viii)(A)		
	20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(B)		

12. LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
Dennis W. Herrin, Lead Engineer	(352) 563-4633

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

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

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

On October 17, 2003, Progress Energy Florida, Inc., (PEF) Crystal River Unit 3 (CR-3) was in NO MODE (Reactor Vessel Defueled) at zero percent RATED THERMAL POWER. While implementing Engineering Change 51164, "Upgrade the Keyboard Commander," CR-3 personnel noticed that the Safety Parameter Display System (SPDS) power supplies to the display servers and peripherals in the Main Control Room were reversed. Degrees of Subcooling is displayed on both SPDS displays. In the as-found configuration, loss of one Vital Bus Distribution Panel would cause the loss of both SPDS monitors. Two channels of the Degrees of Subcooling Function were not operable. Improved Technical Specification 3.3.17 requires that Post Accident Monitoring instrumentation for each Function in Table 3.3.17-1 shall be OPERABLE in MODES 1, 2 and 3. Table 3.3.17-1, Line Item 21, requires two channels of Degrees of Subcooling. With one or more Functions with two required channels inoperable, restore one channel to OPERABLE status within seven days. The identified condition existed since 1999 and is reportable under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical specifications. This condition does not represent a reduction in the public health and safety. The cause was incorrectly labeled SPDS power strips caused by inadequate work instructions in Modification Approval Record 96-11-03-01 implemented in October 1999. The power strips have been correctly labeled. Previous similar occurrences have not been reported to the NRC.

EVENT DESCRIPTION

On October 17, 2003, Progress Energy Florida, Inc., (PEF) Crystal River Unit 3 (CR-3) was in NO MODE (Reactor Vessel Defueled) at zero percent RATED THERMAL POWER. While implementing Engineering Change (EC) 51164, "Upgrade the Keyboard Commander," it was necessary to de-energize Safety Parameter Display System (SPDS) [IP] equipment. When performing steps to de-energize this equipment, CR-3 personnel noticed that the SPDS power supplies [IP, JX] to the display servers [IP, MON] and peripherals in the Main Control Room were reversed.

The SPDS equipment plugs into standard 120 volt alternating current receptacles [ED, RCP]. Power strips are used for this application. Drawing 210-254, Sheet 3, depicts Train A SPDS equipment as being plugged into power strip "BN." Train B SPDS equipment is depicted as being plugged into power strip "BP." Power strip "BN" is depicted as being plugged into receptacle "BS." Power strip "BP" is depicted as being plugged into receptacle "BR." The as-found configuration had SPDS Train A equipment (power strip "BN") plugged into SPDS Train B receptacle "BR" and SPDS Train B equipment (power strip "BP") plugged into SPDS Train A receptacle "BS."

Improved Technical Specification (ITS) 3.3.17, Post Accident Monitoring (PAM) Instrumentation [IP], requires that PAM instrumentation for each Function in Table 3.3.17-1 shall be OPERABLE in MODES 1, 2 and 3. Table 3.3.17-1, Line Item 21, requires two channels of Degrees of Subcooling [IP, CHA]. ITS 3.3.17, Condition C, states that with one or more Functions with two required channels inoperable, restore one channel to OPERABLE status within seven days.

Degrees of Subcooling (Subcooling Margin) is displayed in degrees Fahrenheit on both SPDS displays. The SPDS is the primary display of margin to saturation for each Reactor Coolant System (RCS) [AC] loop. This variable is used by the operator to trip the Reactor Coolant Pumps (RCPs) [AC, P] within two minutes of the loss of Subcooling Margin. In the as-found configuration, the loss of one Vital Bus Distribution Panel (either VBDP-3 or VBDP-4) [EF, PL] would cause the loss of one SPDS monitor. By having the SPDS power supplies reversed, the SPDS computer and Hub that feeds the available SPDS monitor would also be lost. In effect, two channels of the Degrees of Subcooling Function were not operable.

The identified condition is considered to have existed for a period of time longer than allowed by ITS 3.3.17. Therefore, the condition is being reported under 10CFR50.73(a)(2)(i)(B) as a condition prohibited by Technical Specifications.

SAFETY CONSEQUENCES

The purpose of the SPDS is to assist the control room operator in the evaluation of plant conditions during both normal and abnormal situations. The system is designed to use a minimum number of displays and parameters, yet it concisely presents to the operator information concerning the safety status of the following functions required by NUREG-0737, Revision 1, and NUREG-0696: reactivity control; reactor core cooling and primary system heat removal; RCS integrity; radioactivity control; and, containment integrity. The SPDS can be used to quickly focus on abnormal areas, thus limiting the number of control room indicators to be reviewed for further monitoring.

The SPDS is the primary display of margin to saturation for each RCS loop. This variable is used by the operator to trip the RCPs within two minutes of the loss of Subcooling Margin. However, Administrative Instruction AI-505, "Conduct of Operations During Abnormal and Emergency Events," Step 4.2.9.3, states that if SPDS is unavailable, subcooling margin is determined by plotting RCS temperature and pressure on Enclosure 5 or 6 of this procedure or on the same figures of applicable Emergency Operating Procedures (EOPs). EOP-03, "Inadequate Subcooling Margin," Step 2.1, states that if RCPs were not stopped within two minutes, then ensure one RCP remains running in each RCS loop to avoid core damage. This procedural guidance provides sufficient backup during a loss of SPDS to allow operators to perform required actions within specified time frames.

Based on the above discussion, PEF concludes that the identified condition did not represent a reduction in the public health and safety. This event does not meet the definition of a Safety System Functional Failure.

CAUSE

The cause for incorrectly labeling the SPDS power strips was inadequate work instructions in Modification Approval Record (MAR) 96-11-03-01 which was implemented in October 1999. The instructions were not written where the worker could have followed them and been assured that power strip labeling was accurate per plant drawings. The Administrative Controls in place at the time (Nuclear Engineering Procedures) were much less specific than current process controls (EGR-NGGC-0005, Engineering Change). For this reason, no corrective actions are necessary to address this cause.

A contributing cause was insufficient post modification testing. Following the work performed under MAR 96-11-03-01, the post modification testing verified power supplies to the BS and BR receptacles from VBDP-3 and VBDP-4 breakers, but did not include testing to verify that the SPDS equipment and peripherals were plugged into the correct receptacles per plant drawings. Due to the nature of this equipment and its requirements to be powered by independent power supplies, the post modification testing should have included this level of detail.

CORRECTIVE ACTIONS

1. The SPDS power strips have been properly labeled.

2. No corrective actions are required to address the historical condition of inadequate labeling. Current engineering change procedures are considered adequate to ensure proper labeling during the implementation of engineering changes.

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	03	- 004 -	00	4 OF 6

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

3. Other actions associated with this event (e.g., the contributing cause) are being addressed in the CR-3 Corrective Action Program in Nuclear Condition Report 108023.

PREVIOUS SIMILAR EVENTS

No previous similar events associated with SPDS power supplies to the display servers and peripherals in the Main Control Room being reversed have been reported to the NRC by CR-3.

ATTACHMENTS

Attachment 1 - Abbreviations, Definitions, and Acronyms

Attachment 2 - List of Commitments

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	03	- 004 -	00	5 OF 6

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

ATTACHMENT 1

ABBREVIATIONS, DEFINITIONS AND ACRONYMS

AI	Administrative Instruction
CFR	Code of Federal Regulations
CR-3	Crystal River Unit 3
EC	Engineering Change
EGR-NGGC	Nuclear Generation Group Standard Procedure - Engineering
EOP	Emergency Operating Procedure
ITS	Improved Technical Specifications
MAR	Modification Approval Record
PAM	Post Accident Monitoring
PEF	Progress Energy Florida, Inc.
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
SPDS	Safety Parameter Display System
VBDP	Vital Bus Distribution Panel

NOTES:

Improved Technical Specifications defined terms appear capitalized in LER text {e.g., MODE 1}

Defined terms/acronyms/abbreviations appear in parenthesis when first used {e.g., Reactor Building (RB)}.

EIIS codes appear in square brackets {e.g., reactor building penetration [NH, PEN]}.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
CRYSTAL RIVER UNIT 3	05000302	03	- 004 -	00	6 OF 6

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

ATTACHMENT 2

LIST OF COMMITMENTS

The following table identifies those actions committed to by PEF in this document. Any other actions discussed in the submittal represent intended or planned actions by PEF. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Supervisor, Licensing & Regulatory Programs of any questions regarding this document or any associated regulatory commitments.

RESPONSE SECTION	COMMITMENT	DUE DATE
	No regulatory commitments are being made in this submittal.	