



**Florida
Power**
CORPORATION

Crystal River Unit 3
Docket No. 50-302

September 2, 1992

3F0992-01

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

Subject: Licensee Event Report (LER) 92-016

Dear Sir:

Enclosed is Licensee Event Report (LER) 92-016 which is submitted in accordance with 10 CFR 50.73.

Sincerely,

G. L. Boldt
Vice President
Nuclear Production

EEF:mag

Enclosure

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

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HOURS. 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) CRYSTAL RIVER UNIT 3 (CR-3)						DOCKET NUMBER (2) 0 5 0 0 0 3 0 2			PAGE (3) 1 OF 3		
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TITLE (4)
Fire Lasting Greater Than 10 Minutes Due to Failure In Alarm Circuit In Battery Charger Causes Declaration Of Alert

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)				
MONTH	DAY	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES N/A			DOCKET NUMBER(S) 0 5 0 0 0		
0 8	0 4	9 2 9 2	0 1 6	0 0	0 9	0 2	9 2	N/A			0 5 0 0 0		

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (CHECK ONE OR MORE OF THE FOLLOWING) (11)									
POWER LEVEL (10) 1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(v)	73.71(b)						
	20.405(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)						
	20.405(a)(1)(ii)	50.38(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)						
	20.405(a)(1)(iv)	50.73(a)(2)(i)	50.73(a)(2)(vii)(XA)							
	20.405(a)(1)(v)	50.73(a)(2)(ii)	50.73(a)(2)(vii)(XB)							
	20.405(a)(1)(v)	50.73(a)(2)(iii)	X 50.73(a)(2)(x)							

LICENSEE CONTACT FOR THIS LER (12)
NAME: W. A. Stephenson, Nuclear Safety Supervisor
TELEPHONE NUMBER: AREA CODE 9 0 4 7 9 5 - 6 4 8 6

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRRDS
X	E J	B Y C	C & D						

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

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

On August 4, 1992, Crystal River Unit 3 was operating in MODE 1 (POWER OPERATION) at 100% of RATED THERMAL POWER power. At approximately 0545, an annunciator alarm in the control room indicated that a fire/smoke detector had actuated within the control complex. The abnormal procedure for fire was followed, the fire team leader was dispatched to the area, and the fire brigade assembled. The source of the smoke was the 'D' battery charger. The 'D' battery charger was deenergized and the spare battery charger placed in service. An Alert was conservatively declared at 0602, the "fire" was declared out, and the event was downgraded to an Unusual Event at approximately 0605. At 0626, the Unusual Event was exited.

A silicon rectifier unit in the alarm circuit of the battery charger failed and resulted in high current. The high current caused a wire and insulation to melt with subsequent smoke evolution. A one-hour report was made as required by 10CFR50.72(b)(7)(vi). This report is being submitted in accordance with 10CFR50.73(a)(2)(x). The failed rectifier unit was replaced and a safety-related fuse circuit was installed. The remaining vital bus battery chargers will be modified in the same manner.

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

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FACILITY NAME (1) CRYSTAL RIVER UNIT 3 (CR-3)	DOCKET NUMBER (2)		LER NUMBER (8)			PAGE (3)													
			YEAR	SEQUENTIAL NUMBER	REVISION NUMBER														
	0	5	0	0	0	3	0	2	9	2	0	1	8	0	0	0	2	OF	0

TEXT (If more space is required, Use additional NRC Form 366A's (17))

EVENT DESCRIPTION

On August 4, 1992, Crystal River Unit 3 (CR-3) was operating in MODE 1 (POWER OPERATION) at 100% of RATED THERMAL POWER (RTP) power and 865 MWe. At approximately 0545, an annunciator alarm in the control room indicated that a fire/smoke detector had actuated within the control complex on the 108 foot elevation. The operating shift entered the abnormal procedure for fire and the fire team leader was dispatched from the control room to the area and reported that the battery charger [EJ,BYC] room for the 'B' battery [EJ,BTRY], which contains the 'D' battery charger, was filled with smoke. The smoke was apparently originating from the 'D' battery charger. The 'D' battery charger was manually deenergized at 0559.

An Alert was conservatively declared at 0602 by the Emergency Coordinator based on a fire within the protected area of greater than ten minutes duration possibly affecting safety-related equipment. The fire brigade entered the battery charger room and reported that no flames were visible, no fire extinguishing agents were used, and that the 'D' battery charger was de-energized.

The "fire" was declared out and the event was downgraded to an Unusual Event at approximately 0605. The spare battery charger was then placed into service by procedure. In accordance with the Emergency Plan, the State of Florida Division of Emergency Management was notified at approximately 0609 and the NRC was notified at approximately 0621 via the Emergency Notification System in accordance with 10CFR50.72(b)(1)(vi). At 0626, the Unusual Event was exited. This report is being submitted in accordance with 10CFR50.73(a)(2)(x).

CAUSE

The battery charger is equipped with an alarm circuit which contains a silicon rectifier unit. The silicon rectifier unit rectifies the 120 volt alternating input current into a direct output current for the alarm circuit. Two diodes in the rectifier unit were found to be shorted thus bypassing the alarm circuit, causing the silicon rectifier to draw high current. The high current caused the insulation on the conductor wire to melt and eventually the wire to burn in half. The battery charger was manufactured by C&D Power Systems in 1971, model number ARR130K200.

EVENT EVALUATION

The operability of the alternating and direct current power sources during operation ensures that sufficient power will be available to supply the safety related equipment required for safe shutdown and mitigation of accident conditions.

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	0	5	0	0	0	3	0	2	9	2	0	1	6	0	0	0	3	OF	0

TEXT (If more space is required, Use additional NRC Form 366A e (1.7))

The vital bus station batteries are designed and equipped with three battery chargers for each battery. During normal operation, two of the battery chargers are in service supplying a float charge to the battery and the third is available to be placed in service if a failure should occur. After it was determined that the 'D' battery charger was the source of the smoke, it was immediately secured. The standby charger was then placed in service for the faulted charger. The battery bus voltage was maintained by the battery during the event.

The event and recovery were adequately addressed through the use of normal and abnormal operating procedures. Emergency procedures were not required. Public health and safety was not compromised by the inoperability of the 'D' battery charger because of the installed backup charger.

CORRECTIVE ACTION

1. The silicon rectifier unit in the 'D' battery charger was replaced and safety-related fuses were installed in the alarm circuit. This same modification will be performed on the remaining vital bus battery chargers.
2. Florida Power Corporation is evaluating a project to replace the battery chargers.

PREVIOUS SIMILAR EVENTS

Since initial installation, there has been a total of fourteen failures associated with the vital bus battery chargers. There have been no previous similar events related to failures within the alarm circuitry.