

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) CRYSTAL RIVER UNIT 3	DOCKET NUMBER (2) 0 5 0 0 0 3 0 2	PAGE (3) 1 OF 0 3
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TITLE (4)  
Low Pressure Injection Actuation Caused By Bistable Malfunction

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)
0 4	2 4	8 4	8 4	0 0 8	0 0	0 5	2 4	8 4	N/A		0 5 0 0 0
									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) 0 9 0	20.402(b)	20.406(a)(1)(i)	20.406(a)(1)(ii)	20.406(a)(1)(iii)	20.406(a)(1)(iv)	20.406(a)(1)(v)	20.406(c)	50.38(a)(1)	50.38(a)(2)	50.73(a)(2)(i)	50.73(a)(2)(ii)	50.73(a)(2)(iii)	50.73(a)(2)(iv)	50.73(a)(2)(v)	50.73(a)(2)(vi)	50.73(a)(2)(vii)(A)	50.73(a)(2)(vii)(B)	50.73(a)(2)(viii)	50.73(a)(2)(ix)	73.71(b)	73.71(a)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)		

LICENSEE CONTACT FOR THIS LER (12)

NAME W. K. Bandhauer, Nuclear Safety Supervisor	TELEPHONE NUMBER AREA CODE 9 0 4 7 9 5 - 6 4 8 6
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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		
x	J E E I S	B 0 4 0		YES							

SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (if yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	EXPECTED SUBMISSION DATE (15) MONTH DAY YEAR
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ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On April 24, 1984 at 1040, Crystal River Unit 3 experienced a partial Engineered Safeguards System Actuation. The unit was at 97% reactor power (865 MWe) with Surveillance Procedure, "Engineered Safeguards Monthly Functional Test" in progress. A false low pressure and high pressure injection occurred when, with Channel 3 tripped in order to test it, a low pressure bistable in Channel 2 inadvertently actuated completing the required two out of three actuation logic. Borated water was injected into the Reactor Coolant System from the Borated Water Storage Tank. Due to quick operator action, approximately 30 gallons were injected, and the effect on the primary plant was minimal.

With the reactor coolant pressure above setpoint, the low pressure bistable of Channel 2 was discovered in a tripped condition. The bistable was replaced. The Surveillance Procedure was satisfactorily performed.

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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

SEQUENCE OF EVENTS

TIME

EVENT DESCRIPTION

09:30:00 Technicians commenced Channel Functional Test Surveillance Procedure on Engineered Safeguards System (JE).

10:30:00 Technicians placed "B" train Channel 3 of Engineered Safeguards in "test" which tripped Channel 3.

10:40:15 Channel 2 Low Pressure Injection bistable failed in tripped condition. This completed 2 out of 3 logic and actuated "B" train Low Pressure Injection (BP) and High Pressure Injection (BQ) Systems.

10:52:00 Operators stabilized the plant.

11:25:00 Technicians discovered failed Channel 2 Low Pressure Injection bistable.

15:00:00 Failed bistable was replaced, and the replacement satisfactorily tested.

PLANT PERFORMANCE

1. Pre-trip Review

Crystal River Unit 3 was operating at 97% reactor power while generating 865 MWe. All Engineered Safeguards equipment was operable with the exception of the "B" Decay Heat Pump Discharge Valve (BP, ISV) which was tagged out for modification. Technicians were performing a Channel Functional Test of the Engineered Safeguards System.

2. Initiating Event

Channel 3 of the "B" train of Engineered Safeguards was in the tripped condition due to the channel functional test. The Channel 2 Low Pressure Injection bistable failed to the tripped condition which completed the "2 out of 3" logic to actuate the "B" train of Low Pressure Injection and High Pressure Injection systems.

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

3. Plant Response

With the exception of the "B" Decay Heat Pump Discharge Valve (inoperable for modification), all affected Engineered Safeguards equipment actuated properly. Plant operators responded quickly, evaluated the actuation as false, terminated the Engineered Safeguards actuation, and stabilized the plant.

SAFETY CONSIDERATIONS

1. Low Pressure Bistable Failure

This bistable failure did not render any portion of the Engineered Safeguards System inoperable as Low Pressure and High Pressure Injection Systems of the "B" train were placed in the actuated condition. Additionally, if this failure of Channel 2 occurred without another channel in test, either Channel 1 or 3 would have automatically actuated Engineered Safeguards, if required.

2. "B" Decay Heat Pump Discharge Valve

This valve was intentionally disabled for modification. The "A" Decay Heat train was available throughout this event if Low Pressure Injection was actually required.

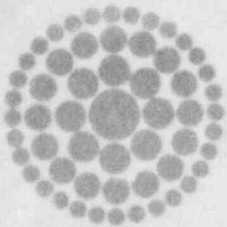
CORRECTIVE ACTIONS

During an inspection of the Engineered Safeguards instrumentation following the event, technicians discovered the failure of the bistable by noting improper status lights on the bistable. The Low Pressure Injection bistable was replaced. The replacement bistable was tested satisfactorily.

The failure was not reproducible during a bench test of the failed bistable. This type of bistable uses mercury-wetted relays. Because any physical movement of these relays tends to recoat the contacts, it makes it difficult to reproduce this type of failure.

PREVIOUS SIMILAR EVENTS

There has been one prior occurrence of an event similar to this one. It occurred on March 13, 1984 and was reported as LER 84-006. The distinct possibility exists that the bistable which caused this failure was also the component which initiated that event.



**Florida  
Power**  
CORPORATION

May 24, 1984  
3F0584-12

Document Control Desk  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: Crystal River Unit 3  
Docket No. 50-302  
Operating License No. DPR-72  
Licensee Event Report No. 84-008-00

Dear Sir:

Enclosed is Licensee Event Report (LER) No. 84-008-00 which is submitted in accordance with 10CFR50.73.

Should there be any questions, please contact this office.

Sincerely,

*P. Y. Baynard*  
P. Y. Baynard  
Assistant to Vice President  
Nuclear Operations

AEF/feb

Enclosure

cc: Mr. James P. O'Reilly  
Regional Administrator, Region II  
Office of Inspection & Enforcement  
U.S. Nuclear Regulatory Commission  
101 Marietta Street N.W., Suite 2900  
Atlanta, GA 30303

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