



**Florida
Power**
CORPORATION

Crystal River Unit 3
Docket No. 5U-302

April 27, 1992
3F0492-12

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

Subject: Licensee Event Report (LER) 92-02

Dear Sir:

Enclosed is Licensee Event Report (LER) 92-02 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, NRP
Senior Resident Inspector

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PDR ADDCK 05000302
S PDR

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. 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) | | DOCKET NUMBER (2) | | PAGE (3) | |
| CRYSTAL RIVER UNIT 3 (CR-3) | | 0 5 0 0 0 3 0 2 | | 1 OF 0 3 | |

TITLE (4) Shutdown Required By Technical Specification 3.0.5 Due To Inoperable Emergency Diesel Generator and Inoperable Vital Bus Inverter

| 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 3 | 2 7 | 9 2 | 9 2 | 0 0 2 | 0 0 0 | 0 4 | 2 7 | 9 2 | N/A | | 0 5 0 0 0 |
| | | | | | | | | | N/A | | 0 5 0 0 0 |

OPERATING MODE (9) 3

POWER LEVEL (10) 0 0 0

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5. (Check one or more of the following) (11)

| | | | |
|-------------------|------------------|---------------------|--|
| 20.402(b) | 20.405(e) | 50.73(a)(2)(iv) | 73.71(b) |
| 20.406(a)(1)(iii) | 50.36(c)(1) | 50.73(a)(2)(v) | 73.71(c) |
| 20.406(a)(1)(iv) | 50.36(c)(2) | 50.73(a)(2)(vi) | OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| 20.406(a)(1)(v) | X 50.73(a)(2)(i) | 50.73(a)(2)(vii)(A) | |
| 20.406(a)(1)(vi) | 50.73(a)(2)(ii) | 50.73(a)(2)(vii)(B) | |
| 20.406(a)(1)(vii) | 50.73(a)(2)(iii) | 50.73(a)(2)(ix) | |

LICENSEE CONTACT FOR THIS LER (12)

| | |
|---|-------------------------------|
| NAME | TELEPHONE NUMBER |
| W. A. Stephenson, Nuclear Safety Supervisor | 9 0 4 7 1 9 5 1 - 6 4 1 8 1 6 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRCDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NRCDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| X | E | K | P F 0 1 0 | YES | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

| | | | |
|-------------------------------|-------|-----|------|
| EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
| | | | |

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

On March 27, 1992, Crystal River Unit 3 was shutdown in HOT STANDBY with a Reactor Coolant temperature of 515 degrees F and at a pressure of 2000 psig. The plant was being cooled down to approximately 300 degrees to allow work on the Position Indicator system of the Control Rod Drive Mechanisms. Vital Bus Inverter/Transformer 1C (VBIT-1C) was out of service. The Emergency Diesel Generators (EDG) were supplying power to the 4160V Engineered Safeguards (ES) busses. A loss of power to the 4160V ES Busses earlier in the day had resulted in a reactor trip and subsequent starting/loading of the EDGs. EDG-3B had a one gallon per hour leak from the Jacket Coolant Pump (DJP-2) seal prior to the trip. Following the autostart of EDG-3B, the nuclear shift supervisor decided the 'B' EDG was not "OPERABLE" because leakage from DJP-2 had increased to 2-3 gpm. The inoperability of EDG-3B with VBIT-1C out of service required the plant to enter Technical Specification 3.0.5. This required a cooldown to less than 200 degrees (MODE V). The jacket coolant leakage was caused by an end-of-life failure of elastomer components in the shaft seal on the DJP-2 of the diesel. The seals were replaced. An addition to the Preventative Maintenance program will cause replacement of the elastomer components before end-of-life failure occurs. This event is reportable under 10 CFR 50.73(a)(2)(i)(A and B).

EXPIRES 4/30/92

LICENSEE EVENT REPORT (LER)
TEXT CONTINUATION

ESTIMATED PERSON PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST 60.0 HOURS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20545, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON DC 20503.

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|--|-------------------|---|----------------|-------------------|-----------------|----------|---|---|---|---|---|---|---|---|---|---|---|----|---|
| FACILITY NAME (1) CRYSTAL RIVER UNIT 3 (CR-3) | DOCKET NUMBER (2) | | LER NUMBER (6) | | | PAGE (3) | | | | | | | | | | | | | |
| | | | YEAR | SEQUENTIAL NUMBER | RELATION NUMBER | | | | | | | | | | | | | | |
| | 0 | 5 | 0 | 0 | 0 | 3 | 0 | 2 | 9 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | CP | 6 |

TEXT (If more space is required, Use additional NRC Form 356A (17))

EVENT DESCRIPTION

On March 27, 1992, Crystal River Unit 3 was shutdown in MODE III (HOT STANDBY) with a Reactor Coolant System (RCS) temperature of 515 degrees F and a pressure of 2000 psig. A reactor trip had occurred earlier. The plant was being cooled down to approximately 300 degrees in accommodate work on the Position Indicator (PI) system of the Control Rod Drive Mechanisms (CRDM)[AA,ZI]. Vital Bus Inverter/Transformer IC (VBIT-1C) [EE,INVT] was out of service and Technical Specification 3.8.2.1 Action Statement b applied. VBIT-1C is the normal power supply to the 'C' Vital Bus [EF,BU]. The reactor trip resulted from a loss of power to the Engineered Safeguards (ES) 4160V Busses [JE,BU] which also automatically started and loaded the Emergency Diesel Generators (EDG)[EK,DG]. Prior to the reactor trip, EDG-3B had a one gallon per hour (gph) leak from the jacket coolant pump (DJP-2) [EK,P]. The leakage was being made up regularly. Repair of the leak had been scheduled for the following week.

The Nuclear Shift Supervisor On Duty (NSSOD) was informed by an off-duty Shift Technical Advisor that leakage from the seal of DJP-2 had increased to approximately 2-3 gallons per minute (gpm) with the diesel running and make up to account for the increased leakage was difficult. At this point, the operability of EDG-3B was questioned. The ES Busses were placed on the Offsite Power Transformer (OPT) [EA,XFMR] and EDG-3B was shut down at 1538.

After the diesel was shutdown, the Auxiliary Building Operator reported that the leakage had decreased although the volume of the leak was higher than before the trip. Discussions were held with the Engineer responsible for the EDG system, the On Duty Shift Technical Advisor, and management personnel concerning condition and operability of EDG-3B. The NSSOD contacted the Director of Nuclear Plant Operations and informed him of the situation and that he was declaring EDG-3B inoperable at 2330 on March 27, 1992. The combination of VBIT-1C and EDG-3B being inoperable required that the plant enter Technical Specification 3.0.5. This required a cooldown into MODE V (Cold Shutdown). This event is reportable under 10 CFR 50.73(a)(2)(i)(A) and 10 CFR 50.73(a)(2)(i)(B).

CAUSE

Investigation revealed the shaft seals for DJP-2 contained elastomer O-rings and seal bellows. These components were original plant equipment and had worn out in service. The original 1 gph leak had been evaluated as not being sufficient to cause an operability problem prior to the repair scheduled for the following week. However, following the automatic start of EDG-3B on loss of the OPT, the leakage had increased to the point where makeup for the leak was no longer practical and the Nuclear Shift Supervisor determined the EDG was not OPERABLE. The EDG is manufactured by Colt Industries, model number 38TD8-1/8.

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 | 0 | 2 | 0 | 0 | 0 | 3 | OF | 0 |

TEXT (If more space is required, use additional NRC Form 355A's (17))

EVENT EVALUATION

Imposition of the Action Statement for the inoperable JG resulted in cooling down to less than 200 degrees (COLD SHUTDOWN) and instituting decay heat removal cooling as the method of cooling the core. There were no radioactive releases associated with placing the plant in MODE V. The evolution was accomplished using normal operating procedures. Emergency procedures were not required. Public health and safety was not compromised by the inoperability of the EDG because other power sources were available to power vital equipment. All vital equipment could have been retained in service by placing the 4160V ES Bus 3B on the Startup Transformer [EA, XFMR]. Each piece of equipment affected also has redundant equipment powered from the other EDG (EDG-3A).

CORRECTIVE ACTION

1. The leak was repaired on DJP-2A.
2. The Preventative Maintenance (PM) program will be modified to include routine replacement of the elastomer components in the seals of pumps on the EDGs.
3. Remaining pumps on EDG-3A and EDG-3B will be evaluated to determine if the elastomer seals require replacement.

PREVIOUS SIMILAR EVENTS

No previous similar events have occurred.