

ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 9208050077 DOC. DATE: 92/07/27 NOTARIZED: NO DOCKET #
FACID: 50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light Co 05000261
AUTH. NAME AUTHOR AFFILIATION
CROOK, D. Carolina Power & Light Co.
CHAMBERS, R.H. Carolina Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 92-013-00: on 920708, 24 h LCO entered due to inadequate recirculation flow for B safety injection pump & on 920709, plant shut down to hot shutdown condition initiated. Debris removed from pump through sys flushing. W/920730 ltr.

DISTRIBUTION CODE: IE22T COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 5
TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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|-----------|---------------------------|---------------------|---------------------------|---------------------|
| | PD2-1 LA | 1 1 | PD2-1 PD | 1 1 |
| | MOZAFARI, B | 1 1 | | |
| INTERNAL: | ACNW | 2 2 | AEOD/DOA | 1 1 |
| | AEOD/DSP/TPAB | 1 1 | AEOD/ROAB/DSP | 2 2 |
| | NRR/DET/EMEB 7E | 1 1 | NRR/DLPQ/LHFB10 | 1 1 |
| | NRR/DLPQ/LPEB10 | 1 1 | NRR/DOEA/OEAB | 1 1 |
| | NRR/DREP/PRPB11 | 2 2 | NRR/DST/SELB 8D | 1 1 |
| | NRR/DST/SICB8H3 | 1 1 | NRR/DST/SPLB8D1 | 1 1 |
| | NRR/DST/SRXB 8E | 1 1 | <u>REG FILE</u> 02 | 1 1 |
| | RES/DSIR/EIB | 1 1 | RGN2 FILE 01 | 1 1 |
| EXTERNAL: | EG&G BRYCE, J.H | 2 2 | L ST LOBBY WARD | 1 1 |
| | NRC PDR | 1 1 | NSIC MURPHY, G.A | 1 1 |
| | NSIC POORE, W. | 1 1 | NUDOCS FULL TXT | 1 1 |

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Carolina Power & Light Company

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JUL 30 1992

Robinson File No: 13510C

RNPD/92-1987
(10CFR50.73)

United States Nuclear Regulatory Commission
Attn: Document Control Desk
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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT NO. 92-013-00

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with
10 CFR 50.73 and NUREG 1022, Supplements No. 1 and 2.

Very truly yours,

R. H. Chambers
General Manager

H. B. Robinson S. E. Plant

RDC:sgk

Enclosure

cc: Mr. S. D. Ebnetter
Mr. L. W. Garner
INPO

500009

9208050077 920727
PDR ADOCK 05000261
S PDR

JE28

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)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

DOCKET NUMBER (2)

0 5 0 0 0 2 6 1 1 OF 0 4

PAGE (3)

TITLE (4)

PLANT SHUTDOWN DUE TO SAFETY INJECTION PUMP INOPERABILITY

| 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 | 7 | 0 | 9 | 9 | 2 | 9 | 2 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | | | | |
| 0 | 7 | 0 | 9 | 9 | 2 | 9 | 2 | 0 | 7 | 2 | 7 | 9 | 2 | 0 | 5 | 0 | 0 | 0 | 0 |

| OPERATING MODE (9) | | 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)(iv) | | | | 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)(iii) | | | | X 50.73(a)(2)(i) | | | | 50.73(a)(2)(viii)(A) | | | | | | | |
| | | | | 20.405(a)(1)(iv) | | | | 50.73(a)(2)(ii) | | | | 50.73(a)(2)(viii)(B) | | | | | | | |
| 20.405(a)(1)(v) | | | | 50.73(a)(2)(iii) | | | | 50.73(a)(2)(x) | | | | | | | | | | | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|--|---------------------------------|
| DAVID CROOK, SR. SPECIALIST, REGULATORY COMPLIANCE | AREA CODE 8 0 3 3 8 3 - 1 1 7 9 |

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)

| YES (If yes, complete EXPECTED SUBMISSION DATE) | NO | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|--------------------------|-------------------------------|-------|-----|------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | | | | |

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

On July 8, 1992, at 2307 hours, H. B. Robinson Unit No. 2 entered a 24 hour Limiting Condition for Operation (LCO) due to inadequate recirculation flow for "B" Safety Injection Pump. An investigation of the cause of the low flow condition was initiated. At 2030 hours on July 9, 1992, a plant shutdown to hot shutdown condition was initiated.

The cause of this event is attributed to personnel error. Event investigation identified the cause of the "B" Safety Injection pump's reduced recirculation flow to be foreign material blockage within the associated minimum flow recirculation check valve and flow orifice. This foreign material was subsequently identified as a plastic sheet material fabricated for use as purge dam material for welding operations associated with a recent modification to the RHR minimum flow recirculation system. Removal of the debris was accomplished through extensive system flushing. Repairs associated with the "B" Safety Injection pump were satisfactorily completed at 0812 hours on July 12, 1992, and the plant was returned to service at 1301 hours.

This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(A) as the completion of a plant shutdown required by the plant's Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO. 3150-3164
EXPIRES: 8/31/88

| | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-------------------|----------------|-------------------|-----------------|---|----------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|
| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | | PAGE (3) | | | | | | | | | | | | | | | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | | | | | | | | | | | | | | | |
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TEXT (If more space is required, use additional NRC Form 364A's) (17)

I. DESCRIPTION OF EVENT

On July 8, 1992, at 2307 hours, H. B. Robinson Unit No. 2¹ entered a 24 hour Limiting Condition for Operation (LCO) due to inadequate recirculation flow for "B" Safety Injection Pump. An investigation of the cause of the low flow condition was initiated. At 2030 hours on July 9, 1992, a plant shutdown to hot shutdown condition was initiated. The NRC was notified of this shutdown via the ENS as required by 10 CFR 50.72(b)(1)(i)(A).

Following an additional day of investigation, it was determined that repairs could not be made within the allowed LCO time period. Technical Specification 3.3.1.2 requires that if the system cannot be restored within an additional forty eight hours of achieving hot shutdown condition, the unit must be placed in cold shutdown condition using normal plant cooldown procedures. This LCO would expire on July 11, 1992 at 2259 hours. On July 11, at 1600 hours, the licensee contacted the NRC to request a Regional Waiver of Compliance that would extend the period of hot shutdown condition from 48 hours to 96 hours.² Following this discussion, NRC-Region II verbally granted the requested waiver, effective until July 13, 1992, at 2259 hours.

Repairs associated with the "B" Safety Injection pump were satisfactorily completed at 0812 hours on July 12, 1992 and the plant was returned to service at 1301 hours.

II. CAUSE OF EVENT

The cause of this event is attributed to personnel error. Event investigation³ has identified the cause of the "B" Safety Injection pump's reduced recirculation flow to be the result of foreign material blockage within the associated minimum flow recirculation check valve and flow orifice. This foreign material was subsequently identified as a plastic sheet material which had been fabricated for use as a purge dam material for welding operations associated with a recent modification to the Residual Heat Removal (RHR) minimum flow recirculation system. It is believed that the material was introduced as a result of breakage of one of four, nine inch diameter purge dam pieces.

¹H. B. Robinson Steam Electric Plant Unit No. 2, is a Pressurized Water Reactor in commercial operation since March, 1971.

² H. B. Robinson Serial No. RNP/D/92-1882, dated July 11, 1992.

³ Adverse Condition Reports ACR 92-249 & ACR 92-250

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-316

EXPIRES: 8/31/85

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| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (8) | | | PAGE (3) | | |
| | | YEAR | SEQUENTIAL NUMBER | DIVISION NUMBER | | | |
| | | 0500261 | 92 | -013 | -00 | 03 | OF 04 |

TEXT (If more space is required, use additional NRC Form 346A's) (17)

The investigation identified that use of the plastic purge dams was abandoned after the attempted use of two dams was terminated by their removal from the RHR system piping because the plastic dams could not be adequately sealed. A small, unidentified portion of this material was inadvertently introduced into the system piping associated with the RHR system, the Refueling Water Storage Tank, and the Safety Injection and Containment Spray Pump suction piping.

III. ANALYSIS OF EVENT

At the time of this condition, all ECCS systems were operable with the exception of the "B" Safety Injection pump. With the plant at Hot Shutdown, the boron concentration was raised to cold shutdown levels to compensate for a steam line break accident, and licensee operators were reminded of the Emergency Operating Procedure Function Restoration Procedures that would mitigate an accident, should one occur with the loss of Safety Injection. Therefore, the Safety Injection Pumps were not an immediate concern to prevent a restart accident during a steam line break cooldown. The Charging Pumps were maintained fully operable as a backup to the Safety Injection Pumps. The amount of decay heat inventory was evaluated based on the Units' operation prior to shutdown, and it was determined that a single Charging Pump had capacity that exceeded the heat removal requirements. Additional operator attention to the capability of the Function Restoration Procedures would ensure a reliable compensatory performance could be achieved.

The basis of Technical Specification 3.3 states that "For a single component to become inoperable does not negate the ability of the system to perform its function, but reduces the redundancy provided in the system design and thereby limits the ability to tolerate additional equipment failures." The reactor had been placed in a hot shutdown condition at the time, borated to cold shutdown levels, and the decay heat from the fuel continued to decrease during the additional time repairs were being performed. Additionally, a Probability Risk Assessment of the additional risk associated with the additional 48 hour extension requested was conducted by the licensees Nuclear Engineering Department, and found to be negligible.

Since the plant was borated to cold shutdown boron concentration and the Charging System was capable of providing adequate core cooling at the reduced heat loading, any reduction of margin created by one inoperable Safety Injection Pump had been compensated for.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-3164

EXPIRES: 8/31/86

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| FACILITY NAME (11) | DOCKET NUMBER (2) | LER NUMBER (6) | | PAGE (3) | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| | | 05000261 | 92 | 013 | 010 |
| H. B. ROBINSON, UNIT 2 | | | | | 04 OF 04 |

TEXT (If more space is required, use additional NRC Form 364A's) (17)

IV. CORRECTIVE ACTIONS

Removal of the debris was accomplished through extensive system flushing. The SI system was operated at design flow rates, with no additional blockage of the orifice flow due to material present in that system. Because of the plastic material geometry, it is believed that any material introduced into the Refueling Water Storage Tank would have settled to the bottom of the tank. It is unlikely for the material to be caught in the flow stream due to the geometry of the material and the relationship of the tank to the Safety Injection System's supply line. Therefore it was considered not to represent a blockage threat to any related equipment and piping systems.

The "A" SI Pump had been operated at full flow following the completion of the RHR minimum flow recirculation modification, and has operated greater than thirty minutes in the minimum flow configuration with no evidence of foreign material blockage in that system. Additionally, flow testing was completed on both Containment Spray Pumps in a minimum flow configuration with acceptable results. These pumps are normally aligned with the minimum flow recirculation lines closed, with the pump discharge aligned directly to the containment.

This report is submitted pursuant to 10 CFR-50.73(a)(2)(i)(A) as the completion of a plant shutdown required by the plant's Technical Specifications.

V. ADDITIONAL INFORMATION

A. Component Failures

None

B. Previous Similar Events

None