

PRIORITY 1

ACCELERATED RIDS PROCESSING

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9412300152 DOC.DATE: 94/12/26 NOTARIZED: NO DOCKET #
FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C 05000261
AUTH.NAME AUTHOR AFFILIATION
JURY,K.R. Carolina Power & Light Co.
YOUNG,D.E. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 94-023-00:on 941126,DC control power for 4 kV buses 1 &
2 de-energized when circuit breaker cable inadvertently
pulled out of terminal.Caused by loose electrical
connection.Connection repaired.W/941227 ltr.

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TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

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10 CFR 50.73

Carolina Power & Light Company
Robinson Nuclear Plant
PO Box 790
Hartsville SC 29551

Robinson File No.: 13510C
Serial: RNP/94-1995
DEC 27 1994

United States Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
LICENSEE EVENT REPORT NO. 94-023-00

Gentlemen:

The enclosed Licensee Event Report (LER), is submitted in accordance with 10 CFR 50.73.

Very truly yours,

D. E. Young
Plant General Manager

RDC:rdc
Enclosure

c: Mr. S. D. Ebnetter, Regional Administrator, USNRC, Region II
Ms. B. L. Mozafari, USNRC Project Manager, HBRSEP
Mr. W. T. Orders, USNRC Senior Resident Inspector, HBRSEP

9412300152 941226
PDR ADCK 05000261
S FDR

Highway 151 and SC 23 Hartsville SC

NRC FORM 366
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104
EXPIRES 5/31/95

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 INFORMATION AND RECORDS MANAGEMENT BRANCH (MNB 7714), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, 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. 2DOCKET NUMBER (2)
050-261PAGE (3)
1 OF 4

TITLE (4) CONDITION PROHIBITED BY TS DUE TO DEGRADED REACTOR TRIP INSTRUMENTATION

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 NAME	DOCKET NUMBER
11	26	94	94	-- 023 --	00	12	26	94	FACILITY NAME	DOCKET NUMBER 05000
OPERATING MODE (9) N			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10) 98.5			20.402(b)		20.405(c)		50.73(a)(2)(iv)		73.71(b)	
			20.405(a)(1)(i)		50.36(c)(1)		50.73(a)(2)(v)		73.71(c)	
			20.405(a)(1)(ii)		50.36(c)(2)		50.73(a)(2)(vii)		OTHER	
			20.405(a)(1)(iii)		X 50.73(a)(2)(i)		50.73(a)(2)(viii)(A)		(Specify in Abstract below and in Text, NRC Form 366A)	
			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
K. R. Jury: Manager - Licensing/Regulatory ProgramsTELEPHONE NUMBER (Include Area Code)
(803) 857-1363

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).

X NO

EXPECTED SUBMISSION DATE (15)

MONTH DAY YEAR

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

On November 26, 1994, with the H. B. Robinson Steam Electric Plant, Unit No. 2 operating at 98.5% power, DC control power for 4kV Buses 1 and 2 was de-energized when a circuit breaker cable was inadvertently pulled out of the breaker's terminal during ground tracing activities. This rendered the undervoltage and underfrequency trips for the "A" and "C" reactor coolant pumps inoperable. The cause of the cable being pulled away from its termination was due to a loose electrical connection. The loose connection was repaired, and the circuit was returned to service. The action statement of Technical Specifications (TS) for underfrequency and undervoltage on the 4kV Systems states that, in the event that the minimum number of operable channels cannot be met, the reactor must be maintained in the hot shutdown condition. Since this action could not be met, TS Section 3.0 was entered. This condition did not have a safety consequence because the loss of undervoltage and underfrequency trips of the reactor coolant pumps are not credited for mitigating an accident in the Updated Final Safety Analysis Report Accident Analysis. Procedures will be implemented to provide instructions and precautions for inspection and tightening the specific electrical connections. This report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by TS.

NRC FORM 366A
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	050-261	YEAR 94	SEQUENTIAL NUMBER 023	REVISION NUMBER 00	2 OF 4

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

I. DESCRIPTION OF EVENT

On November 26, 1994, H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2 was operating at 98.5% power. At 2132 hours, during troubleshooting activities for a ground on the "A" Battery (EIIS Code: EJ), DC control power for 4kV Buses 1 and 2 (EIIS Code: BU) was de-energized. The positive cable on the load side of the DC circuit breaker (EIIS Code: BKR) was inadvertently pulled out of the breaker's terminal while taking current readings in Distribution Panel "A" with the ground tracing test equipment. The loss of DC control power to 4kV Buses 1 and 2 rendered the remote operating capability of the circuit breakers and the protective relaying inoperable. The loss of this DC circuit resulted in the undervoltage and underfrequency trips for the "A" and "C" reactor coolant pump (EIIS Code: AB) circuit breakers being disabled. Additionally, since the protective relaying could not actuate an undervoltage signal to the Reactor Protection System (RPS) (EIIS Code: JC), that particular portion of the RPS could not provide a signal to trip the Reactor. The action statement of HBRSEP Technical Specifications (TS) Table 3.5-2, Item 13, "Underfrequency on 4kV System," and Item 14, "Undervoltage on 4kV System," states that, in the event that the minimum number of operable channels cannot be met, the reactor must be maintained in the hot shutdown condition. Since this action could not be met, TS Section 3.0 was entered.

II. CAUSE OF EVENT

The cause of the cable being pulled away from its termination within the circuit breaker was primarily due to a loose electrical connection within Distribution Panel "A". The connections at the circuit breakers were not routinely checked for tightness by a scheduled preventive maintenance procedure.

During the troubleshooting efforts, which included testing, cables were moved to facilitate the testing process. Specifically, the test equipment utilized to trace DC grounds imposes an AC signal onto the battery. A clamp-on current transformer (CT) is used at the distribution panels to sense the AC current by clamping the CT onto the cables connected to the load side of the circuit breakers. In order to attach the clamp-on CT around each cable, the adjacent cables must be physically separated to provide adequate room for the CT, thus creating the potential for any loose connection at the circuit breakers to be pulled away from its respective terminal.

NRC FORM 366A
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

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TEXT CONTINUATION

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FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2	050-261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 4
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TEXT (If more space is required, use additional copies of NRC Form 366A) (17)

III. ANALYSIS OF EVENT

Reactor trip signals are provided based on signals from reactor coolant pump power supply undervoltage or underfrequency, and low reactor coolant loop flow. The Updated Final Safety Analysis Report (UFSAR) Accident Analysis for a decrease in reactor coolant system flow rate only assumes the protection provided by the low reactor coolant loop flow trip. The low flow reactor trip protects the core against Departure from Nucleate Boiling in the event of a sudden loss of power to one or more reactor coolant pumps. The undervoltage and underfrequency reactor trips protect against a decrease in reactor coolant flow caused by low electrical voltage or frequency. When voltage and/or frequency begins to decrease, the speed of the motor will decrease causing a lower reactor coolant flow and subsequent reactor trip prior to reaching the low reactor coolant flow trip setpoint. Since only one source of underfrequency/low flow reactor protection circuitry was disabled, and since these RPS functions are not credited for accident mitigation in the UFSAR Chapter 15 Accident Analysis, we have concluded that the loss of the undervoltage and underfrequency trips of the reactor coolant pump breakers did not have any adverse safety consequence.

The action statements from TS Table 3.5-2, items 13 and 14, state that, if the conditions from Section 3.5.1.3 are not met, then the reactor should be maintained in the hot shutdown condition. The TS do not provide for an Allowed Outage Time (AOT) to correct this condition. Since this event occurred with the reactor in the power operation condition, the TS required action could not be met. Therefore, this report is submitted pursuant to 10 CFR 50.73(a)(2)(i)(B), as a condition prohibited by TS.

IV. CORRECTIVE ACTIONS

The loose connection in the Distribution Panel "A" circuit breaker was repaired, the remaining connections in the panel were torqued, and the panel was returned to service prior to proceeding with the DC ground troubleshooting.

A Preventative Maintenance Procedure will be implemented to provide instructions for inspection and tightening the DC Motor Control Centers and Distribution Panels. The procedure for ground tracing will be revised to provide a caution statement for the actions necessary to minimize cable movement during troubleshooting/testing activities. These procedures will be in place by March 1, 1995.

NRC FORM 366A
(5-92)

U.S. NUCLEAR REGULATORY COMMISSION

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TEXT CONTINUATION

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H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2		050-261	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	4 OF 4
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V. ADDITIONAL INFORMATION

A. Failed Components

None

B. Previous Similar Events

None