

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Robinson Nuclear Project Department, Unit No. 2	DOCKET NUMBER (2) 0 5 0 0 0 2 6 1	PAGE (3) 1 OF 03
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TITLE (4)
Undervoltage Relays

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)
01	28	85	85	007	00	02	26	85			050000
											050000

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

OPERATING MODE (9)	20.4u2(b)	20.406(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10) 000	20.406(a)(1)(i)	50.38(c)(1)	50.73(a)(2)(v)	73.71(c)
	20.406(a)(1)(ii)	50.38(c)(2)	X 50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 365A)
	20.406(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
	20.406(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
	20.406(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(ix)	

LICENSEE CONTACT FOR THIS LER (12)

NAME Carson L. Wright	TELEPHONE NUMBER
	AREA CODE: 803 383 -45 214

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

CAUSE	SYSTEM	COMPONENT	MANUF. TURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUF. TURER	REPORTABLE TO NPRDS
X	J/E	2 7	W 1 2 3	Y					

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)

Abstract

On January 28, 1985, it was determined that the four 480V undervoltage relays on the emergency buses E1 and E2 were out of tolerance in the "as found" condition on December 13, 1984, during their annual calibration. The technician recalibrated these relays on December 13, 1984. The reportability of the out-of-tolerance condition was not determined until the technician's foreman reviewed the calibration sheets on January 28, 1985. The cause of the event was determined to be an overly restrictive setpoint description in the Technical Specifications.

Long term corrective action is to request a change to the Technical Specification's tolerance to accommodate the tolerance of the type of relay used since no safety function will be compromised.

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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)

On January 28, 1985, during a routine review of calibration data, it was determined that the loss of voltage relays for emergency buses E1 and E2 were found out of tolerance during their annual calibration on December 13, 1984. Technical Specifications Table 3.5-1 requires these to be set at 328 volts ± 1 volt with an operating time of 0.75 ± 0.25 sec. All four relays were determined to be out of tolerance when checked in the "as found" condition for voltage. The timing for drop-out was acceptable in all four.

These relays are used for detection of loss of voltage for load shedding of the emergency buses during a blackout. Testing was performed on the blackout sequence prior to this calibration, and the error had no effect on the proper operation of the circuit. The cause of the event is the misapplication of a relay setting and the tolerance in the Technical Specifications for the type of relay used. Amendment 52 to Technical Specifications added this setpoint as a part of a change that included the new degraded grid voltage relays. The setting tolerances added by the amendment are more stringent than the type relay provided is capable of achieving. The relay used, part of the original Plant equipment, is a single phase induction disk over/undercurrent relay. It is a highly reliable relay for the application, but the setpoint tolerance noted in Technical Specifications Table 3.5-1 is not applicable to the type relay used. Since the relay is primarily operated by an induction disk, the observed point of operation is very subjective when applying a tolerance of ± 1 volt. The vendor's operating curves indicate a deadband of $\pm 10\%$ in which they do not establish any functional characteristics. The vendor's recommendation for adjusting the relay states, in part, that the setting is verified by ensuring that it actuates and resets at within $\pm 3\%$ of the desired voltage. Drop-out time is verified by deenergizing the relay and measuring the interval from initiation of voltage loss to functional completion of the operating cycle.

Although this setting has been in our Technical Specifications since December, 1980, it was not confirmed to be a problem until this year when the trend of repeated tolerance failures was sufficient to establish the source of the problem. Calibration of other similar non-safety related relays also confirms the need to revise the Technical Specifications' values to a setting tolerance more reasonable for the type relay used as long as the intended safety function is not compromised.

The safety implications are negligible since its function is to operate upon a loss of voltage (0 volts) on the bus. If the vendor's tolerance band of $\pm 10\%$ was used and the minimum voltage is assumed to be reached (295 volts), it is still above the worst case contactor drop-out voltage of 291 volts.

CP&L will request an amendment to the Technical Specifications by April 29, 1985. The duration between the actual calibration and the initiation of this LER was not timely. The technician informed his management immediately after determining the difficulty in establishing the setpoint with the inherent deadband of the relay. After discussion of the problem and a review of data from similar non-safety related relays, the relay was recalibrated and returned to service on December 15, 1984.

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

The determination of LER reportability was inadvertently delayed until post outage review of the calibration documentation initiated a reevaluation for reportability. This evaluation resulted in the determination on January 28, 1985, that the "as found" condition of the relays was indeed reportable. Both the foreman and the supervisor involved are aware of the need for timely evaluation and were cautioned to observe it in future events. Other Maintenance foremen and supervisors performing similar reviews have also been cautioned of the timeliness of reviews for nonconforming equipment.



Carolina Power & Light Company

ROBINSON NUCLEAR PROJECT DEPARTMENT
POST OFFICE BOX 790
HARTSVILLE, SOUTH CAROLINA 29550

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United States Nuclear Regulatory Commission
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Washington, D.C. 20555

ROBINSON NUCLEAR PROJECT DEPARTMENT, UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
LICENSEE EVENT REPORT 85-007

Dear Sir:

In accordance with 10CFR50.73, Licensee Event Report, the enclosed Licensee Event Report is submitted. This report fulfills the requirements for a written report within (30) days of a reportable event and is in accordance with the format set forth in NUREG-1022, September, 1983.

Very truly yours,

R. E. Morgan
General Manager
H. B. Robinson S. E. Plant

CLW:C-14/tk

Enclosure

cc: INPO
H. E. P. Krug
J. N. Grace

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