

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR: 8505060198 DOC. DATE: 85/04/30 NOTARIZED: YES DOCKET #
 FACIL: 50-261 H. B. Robinson Plant, Unit 2, Carolina Power and Light 05000261
 AUTH. NAME: AUTHOR AFFILIATION
 CUTTER, A. B. Carolina Power & Light Co.
 RECIP. NAME: RECIPIENT AFFILIATION
 VARGA, S. A. Operating Reactors Branch 1

SUBJECT: Application for amend to License DPR-23, revising Tech Spec
 to resolve concern resulting from overly restrictive
 setpoint on 480-volt undervoltage relays on Emergency Buses
 E1 & E2. Fee paid.

DISTRIBUTION CODE: A015D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 4+2
 TITLE: OR Submittal: Onsite Emergency Power System

NOTES: 05000261
 OL: 07/31/70

	RECIPIENT		COPIES			RECIPIENT		COPIES	
	ID	CODE/NAME	LTR	ENCL		ID	CODE/NAME	LTR	ENCL
	NRR	ORB1 BC	01	7	7				
INTERNAL:	ACRS		16	6	6	ADM/LFMB		1	0
	NRR/DL/ORAB		12	1	1	NRR/DSI/ICSB	09	1	1
	NRR/DSI/PSB		14	1	1	REG FILE	04	1	1
	RGN2			1	1	RM/DDAMI/MIB	18	1	1
EXTERNAL:	LPDR		03	1	1	NRC PDR	02	1	1
	NSIC		05	1	1				

W/Check #150-
 #527924

TOTAL NUMBER OF COPIES REQUIRED: LTR 23 ENCL 22



Carolina Power & Light Company

APR 30 1985

SERIAL: NLS-85-150

Director of Nuclear Reactor Regulation
Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing
United States Nuclear Regulatory Commission
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
REQUEST FOR LICENSE AMENDMENT
EMERGENCY BUS UNDERVOLTAGE TRIP SETTINGS

Dear Mr. Varga:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant Unit No. 2 (HBR2).

This TS revision resolves a concern resulting from an overly restrictive setpoint. Licensee Event Report No. 85-007 reported that the 480V undervoltage relays (loss of voltage) on the emergency buses E1 and E2 were found out of tolerance during their annual calibration. The cause of the event was determined to be an overly restrictive setpoint in the TS. The Company committed to request a change to the TS revising the setpoints by April 29, 1985.

In addition, CP&L requests a revision to the voltage setting limit provided in TS Table 3.5-1 item 6b for the undervoltage relays (degraded grid) on emergency busses E1 and E2 which have a similar overly restrictive setpoint.

BACKGROUND AND DETAILS

On January 28, 1985, a routine review of calibration data determined that the loss of voltage relays for emergency buses E1 and E2 were out of tolerance. Technical Specifications Table 3.5-1 (item 6a) requires the relays to be set at 328 volts ± 1 volt with an operating time of 0.75 ± 0.25 sec. The loss of voltage relays were determined to be out of tolerance when checked in the "as found" condition for voltage. The timing for drop-out was acceptable.

The relays are used for detection of loss of voltage for load shedding of the emergency busses during a station blackout. Testing was performed on the blackout sequence prior to this recalibration, 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 tolerance in this TS for the type of relay. The relays are part of the original plant equipment; they are single

8505060198 850430
PDR ADDCK 05000261
P PDR

Handwritten:
A015
w/checked
\$150.00
#527924

phase induction disk over/undervoltage relays and are highly reliable for the application. However, the setpoint tolerance noted in TS Table 3.5-1 (item 6a) is not applicable to these particular relays. Since the relays are 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 the relays do not establish any functional characteristics. The vendor recommends verifying the setting by ensuring the relays actuate and reset within $\pm 3\%$ of the desired voltage. Drop-out time is verified by de-energizing the relays and measuring the interval from initiation of voltage loss to functional completion of the operating cycle.

Although this setting has been in HBR2 TS 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 TS values to a setting tolerance more reasonable for the type relay used, as long as the intended safety function is not compromised.

A review concluded the setpoint tolerance for this type of degraded grid voltage relay was also more restrictive than practical. Therefore, CP&L also requests a change to the voltage setting limit for the degraded voltage relays.

SAFETY ANALYSIS

The safety implications of revising the loss of voltage relay setting limits are negligible since the relay's function is to operate on a loss of voltage (0 volts) on the respective emergency bus. If the TS setting limit is revised to the vendor's tolerance of $\pm 10\%$, the lower voltage limit of 295 volts ($328 \pm 10\%$) reached remains greater than the worst case contactor drop-out voltage of 291 volts. The upper voltage limit ($328 \pm 10\%$) ensures that the relay does not inadvertently actuate.

The revision to the trip delay time does not degrade nuclear safety since the maximum response tolerance is not changed and elimination of the minimum response time is conservative.

Revising the TS setting limits for the degraded grid voltage relays to 415 volts ± 4 volts does not reduce the protection against a partial loss of voltage. The lowest voltage limit remains unchanged at 411 volts. The upper voltage limit of 419 volts is conservative since this setting will trip the normal supply breaker at a higher voltage than the previous limit.

The Company requests the TS revisions shown in the attached pages 3.5-10 and 3.5-11.

SIGNIFICANT HAZARDS DETERMINATION

Carolina Power & Light Company has reviewed this request and has determined that the proposed TS revision involves no significant hazards considerations because changes to the setpoint limits of the loss of voltage and degraded voltage relays do not significantly deviate from the operating functions of the 480V emergency bus undervoltage equipment.

The Company has determined:

1. A significant increase in the probability or consequences of an accident previously evaluated is not involved:
 - a. for the setpoint change to loss of voltage relays, since the detection of loss of voltage for load shedding of the emergency buses during a potential station blackout is still maintained and;
 - b. for the setpoint change to degraded grid voltage relays, since the least conservative setpoint for protection against a potential partial loss of voltage is still maintained.
2. The possibility of a new or different kind of an accident from any accident previously evaluated is not created:
 - a. for the setpoint change to loss of voltage relays, since the function of tripping the normal supply breakers at the non-conservative limit at 1.0 seconds (maximum) during a potential station blackout remains unchanged and;
 - b. for the setpoint change to degraded grid voltage relays, since the function of tripping the normal supply breakers remains unchanged.
3. A significant reduction in a margin of safety is not involved:
 - a. for the setpoint change to loss of voltage relays, since the relays function to operate on a loss of voltage (0 volts) and the non-conservative operating time of 1 second maximum is still maintained and;
 - b. for the setpoint change to degraded grid voltage relays, since the least conservative lower setpoint limit is maintained and the change in the upper setpoint limit is conservative, and the normal supply breaker could trip at a higher voltage than before.

The Commission has provided guidance concerning the application of its standards set forth in 10 CFR 50.92 for no significant hazards considerations by providing certain examples published in the Federal Register on April 6, 1983 (48 FR 14864). One of the considerations is a change which may reduce in some way a safety margin but where the results of the change are clearly within all acceptable criteria. The attached proposed change falls within the Commission's example (vi) of a change not likely to involve a significant hazards consideration.

ADMINISTRATIVE

In accordance with 10 CFR 170.12, a check in the amount of \$150 in payment of a license amendment application fee is attached.

The affected pages are attached for your use. Changes are denoted by a vertical bar in the right margin.

If you have any questions concerning this request, please contact Mr. S. D. Floyd at (919) 836-6901.

Yours very truly,



A. B. Cutter - Vice President
Nuclear Engineering & Licensing

ABC/JSK/ccc (1425JSK)
Enclosures

cc: Dr. J. Nelson Grace (NRC-RII)
Mr. G. Requa (NRC)
Mr. H. Krug (NRC Resident Inspector - RNP)

A. B. Cutter, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: 5/18/88


Notary (Seal)

