

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 FACIL:50-261 H.B. Robinson Plant, Unit 2, Carolina Power & Light C      05000261  
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SUBJECT: Application for amend to License DPR-23,changing TS to add  
 footnote to TS Table 3.5-3,Item 3a re loss of voltage relay  
 surveillance.

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**Carolina Power & Light Company**

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SEP 18 1991

SERIAL: NLS-91-245

R. A. WATSON  
Senior Vice President  
Nuclear Generation

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

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23  
EMERGENCY REQUEST FOR LICENSE AMENDMENT - LOSS OF VOLTAGE RELAY SURVEILLANCE

Gentlemen:

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.

This amendment request will add a footnote (d) to TS Table 3.5-3, Item 3a, stating that a one-time-only exception is granted for the remainder of Cycle 14 that allows power operation to continue until an outage of sufficient duration such that the surveillance test, of TS Table 4.1-1, Item 32.a and 4.6.1.2 may be performed.

Recent reviews of the electrical distribution system protective circuits revealed that the testing being performed on the loss of voltage relay logic was not capable of differentiating between which of the two relays/channels per train would produce the desired grid separation and load shed. In addition, as a result of the refueling surveillance testing methodology, the shedding of each Emergency Bus load was not verified. The LCO provided was of insufficient duration to allow preparation of an appropriate test that could be performed at operating conditions prior to LCO expiration. This amendment will provide a one-time exception to the action requirement of "maintaining hot shutdown" such that a procedure may be developed and performed at the first outage of sufficient duration, but not later than Refueling Outage No. 14, to verify circuit adequacy.

Enclosure 1 is a Supporting Analyses/Safety Analyses.

Enclosure 2 is a Significant Hazards Determination.

Enclosure 3 is marked-up TS pages.

Enclosure 4 is the basis request for a waiver of compliance for the affected Technical Specification until the proposed amendment can be processed.

Enclosure 5 is a response to NRC questions from a September 17, 1991, conference call.

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ADD 1

Carolina Power & Light Company (CP&L) requests this amendment be handled as an emergency request since failure to take timely actions will require a plant shutdown to perform testing required by a literal reading of the TS. CP&L believes, as discussed in Enclosure 2, that there is sufficient assurance that the loss of voltage circuitry will perform its required channel action in its as-tested configuration. CP&L requested a Regional Waiver of Compliance from the requirement of TS Table 3.5-3, Item 3a, to allow continued plant operation with all four channels technically inoperable only on the basis of not performing the required surveillance. This request for a waiver was discussed between CP&L, the NRC - Region II, and NRC-NRR personnel via conference call at approximately 1800 hours on September 14, 1991. Per request of the NRC, CP&L submitted a formal request for a waiver of compliance on September 16, 1991. At the conclusion of that call, NRC - Region II verbally granted the requested waiver, effective until 2400 hours Wednesday, September 18, 1991. An additional NRC waiver of compliance is requested while this emergency request is being processed. The basis is provided in Enclosure 4.

If you have any questions concerning this request, please contact Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,

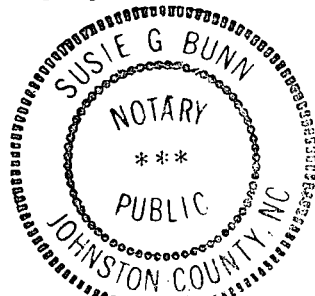
*R A Watson*  
R. A. Watson

JSK/jbw (1299RNP)

Enclosures

cc: Mr. S. D. Ebnetter  
Mr. L. Garner  
Mr. R. Lo  
Mr. G. Shealy (SC)  
Attorney General (SC)

R. A. Watson, 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: 3/28/92

*Susie G. Bunn*  
Notary (Seal)

## ENCLOSURE 1

### Supporting Analyses/Safety Analyses

On September 13, 1991, an internal engineering review determined that current surveillance procedures may not completely address TS required testing for the 480V Emergency Bus Undervoltage (Loss of Voltage) circuitry. The requirement to perform this surveillance is contained in TS Table 4.1-1, Item 32.a, which requires the performance of a CHANNEL FUNCTIONAL TEST on a refueling basis. TS Table 3.5-1, Item 6.a, specifies that the CHANNEL ACTION of this circuit is to "Trip Normal Supply Breaker." The engineering review also called into question the operability of the circuit addressed by the surveillance requirement of TS 4.6.1.2., which requires a test on a refueling basis which verifies "Automatic start of each diesel generator, load shedding and restoration to operability of particular vital equipment..."

The review of the electrical distribution system protective circuits revealed that the testing being performed on the loss of voltage relay logic was not capable of differentiating between which of the two relays/channels per train would produce the required grid separation and load shedding from the respective emergency bus. The testing which had been performed on these circuits demonstrated their combined ability to perform the above safety function; however, it was not known which of the two redundant channels caused the function to occur or whether one of the channels may not have functioned. Also, even though the refueling interval Safety Injection/Loss of Offsite Power test initiates an actual loss of voltage on the emergency busses, several safety load breakers were open at the commencement of this test; therefore, the receipt of load shedding signals for all loads was not verified since these breakers did not change position. Due to the inability to determine overall operability of these protective features, all four channels were declared technically inoperable. TS 3.0 required the plant to be placed in hot shutdown within 8 hours. Due to the ability of the overall train to perform its safety function and to minimize the transients on the plant, CP&L determined that a waiver of compliance from the shutdown requirement would be requested. The waiver was granted on September 14, 1991, to expire at 2400 on September 18, 1991.

CP&L has completed an evaluation of the safety significance of this proposed TS change and concluded that it is minimal. The TS safety-related function of the loss of voltage circuitry being addressed in this change is to isolate the emergency power bus from its normal (off-site) power supply in the event that the supply is lost and shed any loads on the bus at that time. This is necessary so that when the EDG for the bus starts and loads onto the bus, it does so independent of potentially damaging conditions at the normal supply and prevents an immediate overcurrent situation. This assures that required safety-related equipment will be provided with a reliable power supply. The circuit is designed such that there are two redundant channels on each of the two emergency busses, each capable of isolating the normal supply and shedding loads on the bus. (Note that the diesel start signal is only generated by one relay per train.) In addition, only the safety-related equipment from one of the two busses is required to achieve a safe plant shutdown under UFSAR Chapter 15 design basis accident conditions. Current testing does check this function for each train; however, it does not differentiate between the two channels within each train.

While the circuit in question has been technically declared inoperable, there is a high degree of confidence that the four channels are capable of performing their intended function:

- 1) During refueling number 13, all loads on the emergency buses that were in active service did shed.
- 2) During refueling number 12, the incoming 4kV line breaker was tripped which resulted in the emergency buses normal supply breakers tripping on undervoltage.
- 3) During the January 26, 1986 loss of offsite power event the operating emergency bus did trip.
- 4) There have been no reported failures at Robinson of the MG-6 relays for the last 10 years and only 35 reported failures in the NPRDS File.
- 5) The trip coils of the load breakers are tested during normal surveillance testing and tested satisfactorily during their previous test.
- 6) During refueling number 13, the emergency diesel generators were started by their respective undervoltage relay.

In addition to the loss of voltage relay, the EDG is also protected by a degraded voltage relay. This relay is addressed by TS Table 3.5-3, Item 3.b, and is fully operable at this time. The function of this relay is to open the normal supply breaker to its associated emergency bus following a 10-second time delay. In this respect, it is redundant to the loss of voltage relay, however, it does not perform the load shed or diesel start functions. In the event the diesel were to start and attempt to load without either the isolation from normal supply or load shedding functions, the diesel would still be protected by overcurrent devices. From the above discussion, it is concluded that the safety significance of the literal inoperability of the 480V Emergency Bus Undervoltage (Loss of Voltage) Relay circuitry is minimal.

## ENCLOSURE 2

### Significant Hazards Determination

CP&L has reviewed the subject TS change request in accordance with the standards set forth in 10CFR50.92 and determined that this change does not constitute a significant hazard based upon the following considerations:

1. Operation of the facility, in accordance with the proposed amendment, would not involve a significant increase in the probability or consequences of an accident previously analyzed because the equipment and functions addressed by the subject TS involve accident mitigation equipment which does not contribute to the probability of occurrence of accidents. The loss of voltage relay circuitry on a train basis provides an additional level of redundancy above that required to be single failure proof for the load shed function, i.e., it uses two redundant channels within each of two redundant trains. Since the trains are redundant and on a train basis perform their intended function, there is no significant increase in accident consequences.
2. Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated because the redundant safety train circuits continue to perform their required safety function. No new equipment is being introduced, and the existing equipment does not participate in accident initiating sequences; therefore, no new accident can be created. No changes in equipment, systems, or setpoints designed to prevent and/or mitigate accidents will be made. Also, no changes to the plant design bases are made. Therefore, the possibility of a new or different kind of accident from any accident previously evaluated is not created.
3. Operation of the facility, in accordance with the proposed amendment, would not involve a significant reduction in a margin of safety because the redundancy of the safety trains, the high level of reliability of the equipment, and the results obtained from previous tests and experience assure that the required safety function will be accomplished; therefore, there is no significant reduction in the margin of safety.