



Carolina Power & Light Company

P.O. Box 1551 • Raleigh, N.C. 27602

SERIAL: NLS-92-020

JAN 30 1992

G. E. VAUGHN  
Vice President  
Nuclear Services Department

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62  
RESPONSE TO NRC GENERIC LETTER 91-11  
RESOLUTION OF GENERIC ISSUES 48 AND 49

Gentlemen:

The purpose of this letter is to provide, in accordance with 10 CFR 50.54(f), Carolina Power & Light Company's response for the Brunswick Steam Electric Plant, Units 1 and 2 to NRC Generic Letter 91-11, "Resolution of Generic Issue 48, 'LCOs for Class 1E Vital Instrument Buses,' and 49, 'Interlocks and LCOs for Class 1E Tie Breakers' Pursuant to 10 CFR 50.54(f)" dated July 18, 1991.

The generic letter requested that licensees provide certification, within 180 days of receipt of the generic letter, that they have implemented the appropriate procedures conforming to the guidance provided in the generic letter enclosure or have prepared justification that such procedures are not needed. Carolina Power & Light Company does have Technical Specification requirements and procedures in place that conform to the guidance of the generic letter. Each of the NRC recommended actions, and CP&L's response thereto, are provided in Enclosure 1.

Please refer any questions regarding this submittal to Mr. W. R. Murray at (919) 546-4661.

Yours very truly,

G. E. Vaughn

WRM/wrm (gl9111.wpf)

Enclosure

cc: Mr. S. D. Ebner  
Mr. N. B. Le  
Mr. R. L. Prevatte

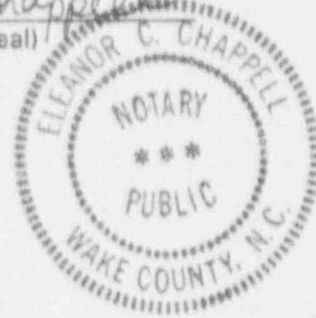
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G. E. Vaughn, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors,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

My commission expires: 2/6/96

Eleanor C. Chappell  
Notary (Seal)



## ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2  
NRC DOCKET NOS. 50-325 & 50-324  
OPERATING LICENSE NOS. DPR-71 & DPR-62  
RESPONSE TO NRC GENERIC LETTER 91-11  
RESOLUTION OF GENERIC ISSUES 48 AND 49

### RECOMMENDED ACTION 1:

Ensure that your plant has procedures that include time limitations and surveillance requirements for vital instrument buses (typically 120V ac buses).

### RESPONSE:

#### 120V ac Emergency Buses:

At the Brunswick Plant, there are four 120V ac emergency buses in service, two buses for each unit. These buses are designated as 1E5, 1E6, 2E7, and 2E8. No tie breakers exist between the 120V ac emergency buses.

The Brunswick Plant Technical Specifications currently include limitations for tie breakers between the four 120V ac buses (even though no tie breakers exist between the 120V ac buses). Specifically, Technical Specification 3.8.2.1 lists the 120V ac buses that are required to be "OPERABLE with the tie breakers open between redundant buses" during OPERATIONAL CONDITIONS 1, 2, or 3. With less than all four of the 120V ac emergency buses OPERABLE, the inoperable bus must be restored to OPERABLE status within 8 hours or the unit must be placed in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

The Brunswick Plant Technical Specifications currently include surveillance requirements for these tie breakers enforcing this restriction (even though no tie breakers exist between the 120V ac buses). Specifically, Technical Specification 4.8.2.1 states the following:

The specified A.C. buses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated availability."

Plant procedure Periodic Test (PT) 12.6, paragraphs 7.9.3, 7.9.4, 7.14.3, and 7.14.4 require the four 120V ac emergency buses to be verified as energized at least once every 7 days.

#### 480V ac Emergency Buses:

At the Brunswick Plant, there are four 480V ac emergency buses in service, two buses for each unit. These buses are designated as E5, E6, E7, and E8. Tie breakers are installed to connect bus E5 to bus E6 and to connect bus E7 and bus E8.

The Brunswick Plant Technical Specifications currently include limitations for tie breakers between the four 480V ac buses. Specifically, Technical Specification 3.8.2.1 lists the 480V ac buses that are required to be "OPERABLE with the tie breakers open between redundant buses" during

OPERATIONAL CONDITIONS 1, 2, or 3. With less than all four of the 480V ac emergency buses OPERABLE, the inoperable bus must be restored to OPERABLE status within 8 hours or the unit must be placed in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

The Brunswick Plant Technical Specifications currently include surveillance requirements for these tie breakers enforcing this restriction. Specifically, Technical Specification 4.8.2.1 states the following:

The specified A.C. buses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated availability."

The following plant procedures provide surveillance requirements covering these buses:

Periodic Test (PT) 12.6, paragraphs 7.6.1.5, 7.6.1.6, 7.6.1.7, and 7.6.1.8 require the four 480V ac emergency buses to be verified as energized at least once every 7 days.

PT 12.6, Breaker Alignment Surveillance, paragraph 7.23.2 requires the tie breaker to compartment AT4 be verified as racked out once every 7 days. This is the E5 tie breaker between emergency buses E5 and E6.

PT 12.6, Breaker Alignment Surveillance, paragraph 7.25.2 requires the tie breaker to compartment AX1 be verified as racked out once every 7 days. This is the E6 tie breaker between emergency buses E5 and E6.

PT 12.6, Breaker Alignment Surveillance, paragraph 7.35.2 requires the tie breaker to compartment A10 be verified as racked out once every 7 days. This is the E8 tie breaker between emergency buses E7 and E8.

PT 12.6, Breaker Alignment Surveillance, paragraph 7.37.2 requires the tie breaker to compartment AX5 be verified as racked out once every 7 days. This is the E7 tie breaker between emergency buses E7 and E8.

#### RECOMMENDED ACTION 2:

Ensure that your plant has procedures that include time limitations and surveillance requirements for the following emergency buses to be verified as energized at least once every 7 days:

#### RESPONSE:

##### 250/125V dc Systems:

At the Brunswick Plant, there are four 250/125V dc battery systems, two for each unit. Each battery system consists of two 125V dc battery banks, two full capacity battery chargers, and a 250/125V dc switchboard. 250/125V dc switchboards 1A and 1B are associated with Unit 1; switchboards 2A and 2B are associated with Unit 2. No tie breakers exist between the 250/125V dc switchboards.

The Brunswick Technical Specifications currently include limitations for the 250/125V dc battery systems (even though no tie breakers exist between the 250/125V dc switchboards). Technical

Specification 3.8.2.3 requires the following divisions in each unit to be OPERABLE with the tie breakers between the divisions open:

Division 1 consisting of:

1. A 250/125 volt bus
2. Two 125 volt dc batteries, each with a full capacity charger

Division 2 consisting of:

1. A 250/125 volt bus
2. Two 125 volt dc batteries, each with a full capacity charger

Technical Specification 3.8.2.3 also specifies that with one or more batteries and/or its associated battery charger inoperable in one division, the division must be restored to OPERABLE status within 7 days or the unit be placed in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. With one or more batteries and/or its associated battery charger inoperable in both divisions, the unit must be placed in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

The Brunswick Plant Technical Specifications currently include surveillance requirements for these tie breakers enforcing this restriction (even though no tie breakers exist between the 250/125V dc switchboards). Specifically, Technical Specification 4.8.2.3.1 requires that each of the required DC divisions be determined OPERABLE with the tie breakers open at least once every 7 days by verifying the correct breaker alignment, indicated power availability, and that no combination of more than two power conversion modules (consisting of either two lighting inverters or one lighting inverter and one plant UPS unit) are aligned to division 2, bus B.

The following plant procedures provide surveillance requirements covering these buses:

Periodic Test (PT) 12.6, paragraphs 7.11.2, 7.11.3, 7.16.2, and 7.16.3 require the Division 1 and 2 for both Unit 1 and Unit 2 be verified at least once every 7 days as having two 125V dc batteries with two full capacity battery chargers supplying each 250/125V dc bus.

PT 12.6, Breaker Alignment Surveillance, paragraphs 7.9.2 and 7.14.2 requires the power conversion module alignment to the battery system be verified once every 7 days.

PT 12.6, Breaker Alignment Surveillance, paragraph 7.15.1 requires the verification once every 7 days of DC power availability for each battery.

### RECOMMENDED ACTION 3:

Ensure that your plant has procedures that include time limitations and surveillance requirements for tie breakers that can connect redundant Class 1E buses (ac or dc) at one unit or that can connect Class 1E buses between units at the same site.



RESPONSE:

The Brunswick Plant Technical Specifications currently include limitations for tie breakers between redundant Class 1E buses between the two Brunswick units. Specifically, Technical Specification 3.8.2.1 lists the Class 1E buses that are required to be "OPERABLE with the tie breakers open between redundant buses" during OPERATIONAL CONDITIONS 1, 2, or 3. This requirement applies to the following buses:

4160 volt Emergency Bus E1 and E3

4160 volt Emergency Bus E2 and E4

480 volt Emergency Bus E5 and E6

480 volt Emergency Bus E7 and E8

The Brunswick Plant Technical Specifications currently include surveillance requirements for these tie breakers enforcing this restriction. Specifically, Technical Specification 4.8.2.1 states the following:

The specified A.C. buses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated availability."

Plant procedure Periodic Test (PT) 12.6 enforces this surveillance requirement by verifying the breakers listed below are "racked out":

Bus	Breaker	Normal Position
E1	AG0 (E3)	Racked Out
E1	AG1 (E2)	Racked Out
E2	AH8 (E1)	Racked Out
E2	AH9 (E4)	Racked Out
E3	AJ5 (E1)	Racked Out
E3	AJ6 (E4)	Racked Out
E4	AL4 (E3)	Racked Out
E4	AL5 (E2)	Racked Out
E5	AT4 (E6)	Racked Out
E6	AX1 (E5)	Racked Out
E7	AX5 (E8)	Racked Out
E8	AI0 (E7)	Racked Out

These breakers are placed under clearance with the control fuses removed for increased assurance that an inadvertent operation does not occur.