CP&L
Carolina Power & Light Company
P. O. Box 1551 • Raleigh, N. C. 27602

MAR 1 6 1989

M. A. McDUFFIE
Senior Vice President
Nuclear Generation

SERIAL: NLS-89-042
10CFR50.90
87TSB01

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
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT
ROSEMOUNT ANALOG TRIP SYSTEMS
(NRC TAC NOS. 65469/65470)

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 for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2. The proposed revisions incorporate test frequency changes for the Rosemount analog trip unit systems. The frequency of functional and calibration tests is being changed from monthly to quarterly.

This request supercedes our previous request dated May 1, 1987 as supplemented July 7, 1988 which requested a six month calibration and function test frequency for Rosemount analog trip unit systems based on actual reliability data. This resubmittal is being made based on NRC approval of a three month test interval for Rosemount analog trip units in NEDC-30851-P-A, "Technical Specification Improvement Analysis for BWR Reactor Protection System," in March 1988 and recent verbal NRC Staff requests for revision of this request.

Enclosure 1 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 2 details the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides instructions for incorporation of the proposed changes into the Technical Specifications for each unit.

Enclosure 4 provides a summary of the proposed Technical Specification changes for each unit on a page by page basis.

Enclosure 5 provides the proposed Technical Specification pages for Unit 1.

Enclosure 6 provides the proposed Technical Specification pages for Unit 2.

Enclosure 7 provides CP&L's "Technical Justification for Changing the Rosemount Analog Trip Unit System Technical Specification Test Interval."

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Enclosure 8 provides General Electric Company Licensing Topical Report NEDO-21617-A, "Analog Transmitter/Trip Unit System for Engineered Safeguard Sensor Trip Input."

In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendments, once approved by the NRC, be issued with an effective date to be no later than 60 days from the issuance of the amendment.

Please refer any questions regarding this submittal to Mr. Stephen D. Floyd at (919) 836-6901.

Yours very truly,

M. A. McDuffie

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Enclosures:
1. Basis for Change Request
2. 10CFR50.92 Evaluation
3. Instructions for Incorporation
4. Summary List of Revisions
5. Technical Specification Pages - Unit 1
6. Technical Specification Pages - Unit 2
7. Technical Justification for Changing the Rosemount Analog Trip Unit System Technical Specification Test Interval
8. Analog Transmitter/Trip Unit System for Engineered Safeguard Sensor Trip Input

cc: Mr. Dayne H. Brown
Mr. S. D. Ebneter
Mr. W. H. Ruland
Mr. E. G. Tourigny

M. A. McDuffie, 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.

Ruby R. Morgan
Notary (Seal)

My commission expires: 11/27/89

RUBY R. MORGAN
NOTARY
PUBLIC
WAKE COUNTY, N. C.

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT
ROSEMOUNT ANALOG TRIP SYSTEMS

BASIS FOR CHANGE REQUEST

Proposed Change

Revise the channel functional test and channel calibration requirements from monthly to quarterly for the Rosemount analog trip instrumentation in Tables 4.3.1-1, 4.3.2-1, 4.3.3-1, 4.3.6.1-1, and 4.3.7.1-1.

Basis

During the period from 1981 to 1984, the direct pressure and differential pressure switches that provide the input intelligence to safety system logic for the emergency core cooling system (ECCS) were replaced with Rosemount transmitters and the Rosemount analog trip system. These changes were based on the General Electric Company (GE) Licensing Topical Report NEDO-21617-A, "Analog Transmitter/Trip Unit System for Engineered Safeguard Sensor Trip Input," issued in late 1978 as an approved method for improving safety system instrumentation (Enclosure 8).

Observations made by both maintenance and operating personnel during the past five years of operation of the Rosemount analog trip system have indicated that the system has a very low failure rate and requires little, if any, calibration. A study of drift and failure rates for these instruments indicates that a test interval in excess of six months could be used and still maintain an exceptional availability of 0.9999. The overall system test interval is determined based on the sum of the non-annunciated failure rates of the trip units and trip relays. The results of the study are included in Enclosure 7.

Based on this demonstrated reliability and the stability of the Rosemount analog trip system, it becomes apparent that the current monthly testing required by the Technical Specifications and established by NEDO-21617-A is unnecessary and contributes adversely to the following areas related to safety:

1. A large number of half scrams are taken for testing (288/year)

2. A large number of half group isolations are taken for testing (912/year)

3. Out of service time for safety systems such as HPCI and RCIC are high because the systems are isolated during testing (192/year)

4. Increased stroking of valves in the drywell is required for testing which may result in increased drywell leakage and potential valve failures

5. High frequency testing creates a higher potential for personnel error.

Rosemount analog trip unit system stability of the past five years supports an increase in test interval. Of 6177 calibrations over five years, 96 percent of the sampled surveillance test results fell within the manufacturer's trip point repeatability specifications while 4 percent showed that recalibration was necessary. The trip units, over their operating history, have exhibited a slight drift in and around their setpoint, however, have stayed well within the manufacturer's specifications. Approximately 39 percent of the calibrations showed no drift in setpoint values. None of the results fell outside the Technical Specification requirements.

In addition, the NRC approved NEDC-30851P-A, "Technical Specification Improvement Analysis for BWR Reactor Protection System," in March 1988. That document further supports our proposed request to extend the current surveillance interval.

Increasing the present monthly surveillance interval to a quarterly test interval would provide the following:

1. Exceptional system availability of 0.9999 with simultaneous testing

2. A reduction in number of half scrams taken for testing (reduced from 288/year to 96/year)

3. A reduction in number of half group isolations taken for testing (reduced from 912/year to 304/year)

4. Reduction of out of service time for safety systems (isolation reduced from 192/year to 64/year)

5. Decreased stroking of valves in the drywell

6. Less potential for personnel error during testing.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT
ROSEMOUNT ANALOG TRIP SYSTEMS

10CFR50.92 EVALUATION

The Commission has provided standards in 10CFR50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (2) create the possibility of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety. Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

Proposed Change

Revise the channel functional test and channel calibration requirements from monthly to quarterly for the Rosemount analog trip instrumentation in Tables 4.3.1-1, 4.3.2-1, 4.3.3-1, 4.3.6.1-1, and 4.3.7.1-1.

Basis

The change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed surveillance frequency change will not decrease the Rosemount analog trip unit system availability below the 0.999 specified in the GE Topical Report NEDO-21617-A. The study of the drift and the failure rates of the Rosemount analog trip unit system in use at BSEP indicates that the trip units are highly repeatable and have much lower actual failure rates than assumed in NEDO-21617-A, which provided the basis for monthly surveillance. The study shows that a test interval in excess of six months could be used, still maintaining an exceptional availability of 0.9999. Increasing the surveillance interval to quarterly would reduce the number of half scrams and half group isolations required for testing, reduce out of service time for safety systems, decrease drywell leakage and potential valve failures by stroking valves inside the drywell less often, and reduce the potential for personnel error. A net reduction in risk, (gain in safety) would be realized with the increased interval.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated. As stated above, availability would remain within the guidelines established by the GE Topical Report. No equipment or any function of any piece of equipment will be changed; only its test frequency will change.

3. The proposed amendment does not involve a significant reduction in the margin of safety. In fact, it involves a net increase in the margin of safety by providing a reduction in half scrams, half group isolations, out of service time for safety systems, drywell leakage and potential valve failures, and personnel error.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT
ROSEMOUNT ANALOG TRIP SYSTEMS

INSTRUCTIONS FOR INCORPORATION

The proposed changes to the Technical Specifications (Appendix A to Operating Licenses DPR-71 and DPR-62) would be incorporated as follows:

UNIT 1

Remove Page	Insert Page
3/4 3-7	3/4 3-7
3/4 3-8	3/4 3-8
3/4 3-25	3/4 3-25
3/4 3-26	3/4 3-26
3/4 3-27	3/4 3-27
3/4 3-28	3/4 3-28
3/4 3-29	3/4 3-29
3/4 3-29b	3/4 3-29b
3/4 3-37	3/4 3-37
3/4 3-38	3/4 3-38
3/4 3-38a	3/4 3-38a
3/4 3-81	3/4 3-81
3/4 3-86	3/4 3-86

UNIT 2

Remove Page	Insert Page
3/4 3-7	3/4 3-7
3/4 3-8	3/4 3-8
3/4 3-25	3/4 3-25
3/4 3-25a	3/4 3-25a
3/4 3-26	3/4 3-26
3/4 3-27	3/4 3-27
3/4 3-28	3/4 3-28
3/4 3-29	3/4 3-29
3/4 3-29b	3/4 3-29b
3/4 3-37	3/4 3-37
3/4 3-38	3/4 3-38
3/4 3-38a	3/4 3-38a
3/4 3-81	3/4 3-81
3/4 3-92	3/4 3-92

ENCLOSURE 4

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKETS 50-325 & 50-324
OPERATING LICENSES DPR-71 & DPR-62
SUPPLEMENT TO REQUEST FOR LICENSE AMENDMENT
ROSEMOUNT ANALOG TRIP SYSTEMS

SUMMARY LIST OF REVISIONS

UNIT 1

Pages	Description of Changes
All	Revise the channel functional test and channel calibration requirements for the Rosemount analog trip system.

UNIT 2

Pages	Description of Changes
All	Revise the channel functional test and channel calibration requirements for the Rosemount analog trip system.