



Carolina Power & Light Company

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OCT 19 1993

SERIAL: BSEP-93-0168
10 CFR 50.90
TSC 93TSB07

ROY A. ANDERSON
Vice President
Brunswick Nuclear Plant

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
REQUEST FOR LICENSE AMENDMENT
TYPE A INTEGRATED LEAKAGE RATE TESTING SCHEDULE

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company hereby requests a revision to Appendix A of Operating Licenses DPR-71 and DPR-62 the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2.

Technical Specification 4.6.1.2.b requires that if two consecutive Type A tests fail to meet 0.75 La or 0.75 Lt, a Type A test shall be performed at each plant shutdown for refueling or every 18 months, whichever occurs first, until two consecutive Type A tests meet the specified leakage limit. This as-found leakage limit is too restrictive and, as a result, Units 1 and 2 are currently in the accelerated testing condition. The proposed amendment adds a footnote to Technical Specification 4.6.1.2 which allows a one-time exemption from the accelerated testing requirement to return the units to a normal Type A testing frequency. This request is similar to amendments recently issued for Sequoyah 2 on August 27, 1990 and for Millstone 1 on January 11, 1993.

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

Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with issuance of the amendment.

Enclosure 4 provides page change instructions for incorporating the proposed revisions.

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

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

Carolina Power & Light Company is providing, in accordance with 10 CFR 50.91(b), Mr. Dayne H. Brown of the State of North Carolina with a copy of the proposed license amendment.

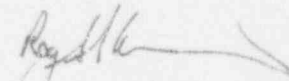
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In order to support the current Unit 1 outage schedule, CP&L requests approval of this amendment request by December 15, 1993. Carolina Power & Light Company requests that the proposed amendments, once approved by the NRC, be issued with an effective date to be no later than 60 days from the issuance of the amendment to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications. Approval of the associated Appendix J exemption request (BSEP-93-0169) is also required. Carolina Power & Light Company considers this request to be a substantial cost beneficial licensing action.

Please refer any questions regarding this submittal to Mr. W. Levis at (919) 457-2404.

Very truly yours,

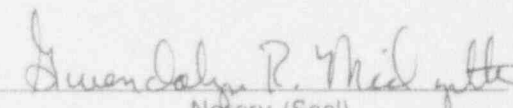

R. A. Anderson

MAT/mat (BNP93168.000)

Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages - Unit 1
6. Technical Specification Pages - Unit 2

R. A. Anderson, 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.


Notary (Seal)

My commission expires: *August 12, 1996*

cc: Mr. Dayne H. Brown
Mr. S. D. Ebnetter
Mr. P. D. Milano
Mr. R. L. Prevatte

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
TYPE A INTEGRATED LEAKAGE RATE TESTING SCHEDULE

BASIS FOR CHANGE REQUEST

Background:

Section III.A.6(b) of Appendix J requires accelerated Type A testing if two consecutive periodic Type A tests fail to meet the applicable acceptance criteria in Section III.A.5(b). This requirement is reflected in Surveillance Requirement 4.6.1.2 of the Unit 1 and Unit 2 Technical Specifications. The La limit for Units 1 and 2 is 0.500 wt%/day, with a corresponding as-found and as-left limit of 0.375 wt%/day (.75 La). Brunswick Units 1 and 2 are both currently in this accelerated testing condition due to as-found testing failures which were within 0.500 wt%/day but exceeded 0.375 wt%/day. The following tables summarize the recent Type A testing history for Units 1 and 2. Testing results are provided in wt%/day.

Unit 1 Type A Testing History

Date	As-Found Results	As-Left Results
1987	> La ⁽¹⁾	.2150
1991	.4956	.3408

Unit 2 Type A Testing History

Date	As-Found Results	As-Left Results
1991	.4042	.3552
1992	.4420	.3511

NOTES: ⁽¹⁾Penetration failure identified during local leak rate testing resulted in ILRT as-found failure.

As demonstrated by the testing result data, Units 1 and 2 are in an accelerated testing frequency due to as-found testing failures which were within the La leakage limit but exceeded the current 0.75 La leakage limit. The primary reason for failing these as-found integrated leakage rate tests is considered to be the leakage savings additions from Type B and C testing of valves and penetrations, where leakage rates of repaired or replaced components from Type B and C testing

are added into the integrated Type A test results. The following tables illustrates the major leakage savings additions from Type B and C testing which resulted in failure of the previous two Type A test for each unit. It should be noted that large Type B and C leakage savings additions are indicative of an aggressive corrective maintenance program. In addition, due to the economics of performing a Type A test, testing is normally terminated as soon as the acceptance criteria is satisfied. The results, therefore, may not be indicative of the actual primary containment leakage. There is a high probability that, if the test durations were extended, the quantified leakage would have been less than that reported.

Unit 1 1991 Type A Test

Major Contributors	Corrective Actions	Savings
Penetration X9B, Feedwater Loop B Injection	Replaced soft seat ring seal on valve B21-F010B. Valve replaced with new design in 1992.	18.5 scfh
Penetration X14, RWCU Suction Line	Replaced valves G31-F001 and G31-F004.	14.45 scfh
Penetration X10, RCIC Turbine Steam Supply Line	Replaced valves E51-F007 and E51-F008.	20.855 scfh
Total Unit 1 1991 As-Found Leakage Savings Additions 82.835 scfh or 0.1548 wt%/day		

Unit 1 1987 Type A Test

Major Contributors	Corrective Actions	Savings
Penetration X9A, Feedwater Loop A Injection	Repaired valve B21-F010B. Valve replaced with new design in 1992. Repaired packing leak-off line on valve B21-F032A and repacked valve.	> La
Penetration X54E, Containment Monitor, CAC-AT-1262, Discharge	Replaced discs in valves CAC-SV-1211E and CAC-SV-3439.	> La
Total Unit 1 1997 As-Found Leakage Savings Additions > La ⁽¹⁾		

⁽¹⁾ Without Penetrations X9A and X54E, the as-found leakage savings would have been approximately 0.049 wt%/day.

Unit 2 1992 Type A Test

Major Contributors	Corrective Actions	Savings
Penetration X14, RWCU Suction	Valve G31-F001 rebuilt. Sealing width found wider than recommended, casting flaws found in upper and lower wedges. Valve G31-F004 rebuilt. Low spots found and sealing width wider than recommended. Casting flaws found in upper wedge.	12.081 scfh
Penetration X12, RHR Shutdown Cooling Suction	Valve E11-F009 rebuilt. Low spots found on inbody seats.	12.801 scfh
Total Unit 2 1992 As-Found Leakage Savings Additions 48.561 scfh or 0.0909 wt%/day		

Unit 2 1991 Type A Test

Major Contributors	Corrective Actions	Savings
Penetration X220, Torus Purge to Standby Gas	Valves CAC-V7 and CAC-V8 repaired.	6.130 scfh
Penetration X8, Main Steam Line Drain	Valve B21-F016 rebuilt. Low spots found on inboard disc seat. Valve B21-F019 rebuilt. Seats lapped.	14.055 scfh
Total Unit 2 1991 As-Found Leakage Savings Additions 26.38 scfh or 0.049 wt%/day		

Current Requirement:

Technical Specification 4.6.1.2.b requires that if two consecutive Type A tests fail to meet 0.75 La or 0.75 Lt, a Type A test shall be performed at each plant shutdown for refueling or every 18 months, whichever occurs first, until two consecutive Type A tests meet the specified leakage limit. This as-found leakage limit is too restrictive and, as a result, Units 1 and 2 are currently in the accelerated testing condition.

Proposed Change:

The proposed amendment adds a footnote to Technical Specification 4.6.1.2.b which allows a one-time exemption from the accelerated testing requirement to return the units to a normal Type A testing frequency.

Basis:

The purpose of 10 CFR 50, Appendix J Type A testing is to measure and ensure that the leakage through the primary containment does not exceed the maximum allowable leakage assumed in the accident analyses. The satisfactory completion of a Type A test ensures that the as-left leakage rates do not exceed 75 percent of those rates assumed by the safety analyses to determine the offsite radiological consequences of an accident. The as-left limit of 0.75 La was specified in Appendix J in order to provide a margin of 0.25 La for possible deterioration of the containment leak-tightness during the interval between Type A tests. This margin for deterioration is no longer needed when the as-found Type A test is performed. It is technically acceptable to use La as the as-found Type A test acceptance criterion. As such, the maximum allowable leakage rate of La is the correct value to use for the as-found limit for Type A leak rate testing. This philosophy has been adopted by the Commission, as well as noted by the proposed revision to Appendix J which incorporates the La value for the as-found limit (51 FR 39540, dated October 1986).

The testing history of Brunswick Units 1 and 2 demonstrates that, if an as-found limit of La is applied, neither Unit would now be in an accelerated testing frequency. As such, continuing the accelerated testing as required by Technical Specification 4.6.1.2.b is not necessary to achieve the underlying purpose of the Type A testing requirements of Appendix J.

Although technically acceptable, the as-found testing results for Units 1 and 2 have required the Units to be placed in an accelerated Type A testing frequency per the requirements of Technical Specification 4.6.1.2.b. In each outage containing a Type A test, corrective actions were taken to ensure that the total as-left leakage was below 0.75 La. Based on the technically acceptable as-found testing results and the corrective actions taken to improve containment integrity, CP&L requests a one-time exemption from the requirements of Technical Specification 4.6.1.2.b to return Units 1 and 2 to a normal testing frequency. Upon approval of this license amendment request and the associated Appendix J exemption request (BSEP-93-0169) the next Unit 1 Type A test will be performed during the upcoming Reload 9 outage and the next Unit 2 Type A test will be performed during the Reload 12 outage. An accelerated test frequency will be resumed, in accordance with Technical Specification 4.6.1.2.b and Section III.A.6(b) of Appendix J if two consecutive Type A tests fail.

Conclusion:

From the discussion and analysis presented above, it has been shown that the current leakage value of 0.75 La is overly conservative for use as the Type A as-found test limit. Carolina Power & Light Company has submitted an exemption request (NLS-92-339, dated December 29, 1992) and a license amendment request (NLS-92-274, dated December 29, 1992) to increase the allowable leakage limit from 0.75 La to La. Application of the 0.75 La leakage limit has resulted in unneeded Type A testing of Unit 2 and will require a Type A test of Unit 1 unless regulatory relief is received. This testing would result in an extended outage and increased outage cost without a significant safety benefit. In addition, Type A testing causes drywell structural stresses which would be minimized by return to a normal testing frequency.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
TYPE A INTEGRATED LEAKAGE RATE TESTING SCHEDULE

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(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. Pursuant to 10 CFR 50.91(a)(1), 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:

The proposed amendment adds a footnote to Technical Specification 4.6.1.2.b which allows a one-time exemption from the accelerated testing requirement to return the units to a normal Type A testing frequency.

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 surveillance requirement for testing of primary containment leakage rates ensures that the total containment leakage volume will not exceed the value assumed in the accident analyses at the peak accident pressure of 49 psig. The primary containment is a steel-lined, reinforced concrete pressure vessel which provides a barrier to fission product release. The safety objective of the primary containment system, in conjunction with ESF, is to contain the energy released during the design basis LOCA and to limit the release of fission products associated with this accident. As such, the primary containment leakage rates or testing frequency have no impact on the accident initiators. A one-time exemption from the Technical Specification required accelerated testing frequency will not impact the accident evaluations discussed in Chapter 15 of the Brunswick UFSAR. Therefore, the probability of an accident previously evaluated is not increased.

The purpose of 10 CFR 50, Appendix J Type A testing is to measure and ensure that the leakage through the primary containment does not exceed the maximum allowable leakage assumed in the accident analyses. The satisfactory completion of a Type A test ensures that the as-left leakage rates do not exceed 75 percent of those rates assumed in the safety analyses to determine the offsite radiological consequences of an accident. The as-left limit of 0.75 La was specified in Appendix J in order to provide a margin of 0.25 La for

possible deterioration of the containment leak-tightness during the interval between Type A tests. This margin for deterioration is no longer needed when the as-found Type A test is performed. It is technically acceptable to use L_a as the as-found Type A test acceptance criterion. As such, the maximum allowable leakage rate of L_a is the correct value to use for the as-found limit for Type A leak rate testing.

The testing history of Units 1 and 2 demonstrates that, if an as-found limit of L_a is applied, neither Unit would now be in an accelerated testing frequency. As such, continuing the accelerated testing as required by Technical Specification 4.6.1.2.b is not necessary to achieve the underlying purpose of the Type A testing requirements of Appendix J.

Based on the above reasoning, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated. Allowing a one-time exemption from the accelerated testing requirement of Technical Specification 4.6.1.2.b will not modify any safety-related equipment or safety functions nor will it alter plant operation. The assumptions and consequences of the accident analyses remain bounded, therefore, possibility of a new or different kind of accident is not created by this change.
3. The proposed amendment does not involve a significant reduction in the margin of safety. The basis of Technical Specification 3/4.6.1.2, Primary Containment Leakage, is to impose limitations on primary containment leakage rates to ensure that the total containment leakage volume will not exceed the value assumed in the accident analyses at peak accident pressure of 49 psig. As an added conservatism, the as-left leakage rate is limited to $.75 L_a$ to account for possible degradation of the containment leakage barriers between tests. Accelerated testing is required if two consecutive tests fail. Accelerated testing ensures that the causes of the test failures have been appropriately identified and corrected, assuring that the assumptions in the accident analyses remain bounded. Limiting the as-found leakage limit to L_a and performing repairs necessary to lower the as-left leakage limit to less than $0.75 L_a$ preserves the $0.25 L_a$ margin required by the original specification. Since neither Brunswick Unit would be in an accelerated testing condition based on an as-found leakage limit of L_a , the proposed change does not involve a significant reduction in the margin of safety as defined in the bases of the Technical Specification. In addition, the proposed amendment does not alter any plant design margins. Allowing the one-time exemption from the accelerated testing requirement of Technical Specification 4.6.1.2.b eliminate the need for subjecting the containment to unnecessary structural stress and burdens of additional Type A testing. Therefore, the proposed amendment will not involve a significant reduction in the margin of safety.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
TYPE A INTEGRATED LEAKAGE RATE TESTING SCHEDULE

ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Proposed Change:

The proposed amendment adds a footnote to Technical Specification 4.6.1.2.b which allows a one-time exemption from the accelerated testing requirement to return the units to a normal Type A testing frequency.

Basis:

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Enclosure 2, the proposed amendment does not involve a significant hazards consideration.
2. The proposed amendment does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite.

Containment functions (accident mitigation functions) are not impacted by the proposed amendment since the containment is not being modified nor are the Type A tests conducted differently. The purpose of 10 CFR 50, Appendix J Type A testing is to measure and ensure that the leakage through the primary containment does not exceed the maximum allowable leakage. The satisfactory completion of a Type A test ensures that the as-left leakage rates do not exceed 75 percent of those rates assumed by the safety analyses to determine the offsite radiological consequences of an accident. The as-left limit of 0.75 La was specified in Appendix J in order to provide a margin of 0.25 La for possible deterioration of the containment leak-tightness during the interval between Type A tests. This margin for deterioration is no longer needed when the as-found Type A test is performed. It is technically acceptable to use La as the as-found Type A test acceptance

criterion. As such, the maximum allowable leakage rate of La is the correct value to use for the as-found limit for Type A leak rate testing.

The testing history of Units 1 and 2 demonstrates that, if an as-found limit of La is applied, neither Unit would now be in an accelerated testing frequency. As such, continuing the accelerated testing as required by Technical Specification 4.6.1.2.b is not necessary to achieve the underlying purpose of the Type A testing requirements of Appendix J. As such, the proposed change can not affect the types or amounts of any effluents that may be released offsite.

3. The proposed amendment does not result in an increase in individual or cumulative occupational radiation exposure. The proposed amendment involves no plant or equipment modifications. The Type A testing procedure typically involves minimal personnel exposure, which would be avoided if the one-time exemption from the accelerated testing requirement of Technical Specification 4.6.1.2.b is granted.

Therefore, the amendment has no affect on either individual or cumulative occupational radiation exposure.

ENCLOSURE 4

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
TYPE A INTEGRATED LEAKAGE RATE TESTING SCHEDULE

PAGE CHANGE INSTRUCTIONS

UNIT 1

<u>Removed Page</u>	<u>Inserted Page</u>
3/4 6-3	3/4 6-3

UNIT 2

<u>Removed Page</u>	<u>Inserted Page</u>
3/4 6-3	3/4 6-3