UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

January 11, 1994

Docket Nos. 50-325
and 50-324

Mr. R. A. Anderson
Vice President
Brunswick Nuclear Project
Carolina Power & Light Company
Post Office Box 10429
Southport, North Carolina 28461

Dear Mr. Anderson:

SUBJECT: EXEMPTION TO 10 CFR PART 50, APPENDIX J, SECTION III.A.5.(B)(2) - BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 (TAC NOS. M88044 AND M88045)

In a letter dated October 19, 1993, the Carolina Power & Light Company (CP&L) requested a one-time exemption for Brunswick Steam Electric Plant (BSEP), Units 1 and 2, from the schedular requirement in Section III.A.6(b) of Appendix J to 10 CFR Part 50. Specifically, CP&L has requested authorization to return both BSEP units to a normal Type A containment integrated leak rate test frequency. The BSEP, Units 1 and 2, are presently on the accelerated Type A test frequency required by Section III.A.6(b) of Appendix J because the previous two Type A tests performed were classified as failures. Section III.A.6(b) of Appendix J requires that if two consecutive periodic Type A tests fail to meet the criteria in section III.A.5.(b)(2), notwithstanding the periodic retest schedule of section III.D, a Type A test must be performed at each plant shutdown for refueling, or approximately every 18 months, whichever occurs first, until two consecutive Type A tests meet the criteria in section III.A.5.(b). The exemption would allow both BSEP units to return to a normal testing frequency so that the next Unit 1 Type A test would then be performed during the Reload 9 outage, scheduled for March 1995, and the next Unit 2 test during the Reload 12 outage, scheduled for March 1997.

In its letter, CP&L stated that it should be technically acceptable to use L_a as the as-found Type A test acceptance criterion and that a margin for deterioration should not be needed when the as-found Type A test is performed. The licensee provided further justification in that the Type A tests are normally terminated as soon as the acceptance criteria are satisfied for economic reasons. The licensee believes that this process may result in leak rates that may not be indicative of actual primary containment leakage and, if the test durations were extended, the quantified leakage would be less than that reported to the NRC. Thus, CP&L concluded that continuing the accelerated testing, as required by Section III.A.6(b), is not necessary to achieve the underlying purpose of the Type A test requirements of Appendix J. CP&L further stated that the accelerated test would result in an extended outage and increased outage costs without a significant safety benefit.

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The one-time Exemption is enclosed. Should two consecutive periodic Type A tests fail to meet the criteria in Section III.A.5.(b)(2) in the future, notwithstanding the periodic retest schedule of section III.D, the licensee will be required to take the appropriate action specified in Section III.A.6(b) of Appendix J to 10 CFR Part 50. A copy of the Exemption is being filed with the Office of the Federal Register for publication.

In a letter dated October 19, 1993, CP&L also proposed an amendment to the BSEP Technical Specifications. This proposed amendment will be issued under separate cover.

Sincerely,

Patrick D. Milano, Sr. Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Exemption to 10 CFR Part 50,
Appendix J

cc:
See next page

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	Docket Nos. 50-325
	)	and 50-324
(Brunswick Steam Electric Plant, Units 1 and 2)	)	
	)	

EXEMPTION

I.

The Carolina Power & Light Company (the licensee) is the holder of Facility Operating License Nos. DPR-71 and DPR-62 which authorize operation of the Brunswick Steam Electric Plant, Units 1 and 2 (BSEP or the facility), respectively, at steady state power levels not in excess of 2436 megawatts thermal. The facility consists of two boiling water reactors located at the licensee's site in Brunswick County, North Carolina. The Facility Operating License provides, among other things, that BSEP is subject to all rules, regulations and Orders of the Nuclear Regulatory Commission (the Commission) now and hereafter in effect.

II.

Section III.A.5.(b)(2) of Appendix J establishes an acceptance criterion for the total measured containment leakage rate, L_{am}, measured at the peak containment internal pressure, P_a, calculated for the design basis accident. Since the periodic Type A tests at BSEP are conducted at P_a, the acceptance criterion for these tests is that L_{am} be less than 75 percent of the maximum allowable leakage rate, L_a, as specified in Technical Specification 4.6.1.2.b;

this value is 0.5 percent by weight of the containment air per 24 hours. Section III.A.6(b) of Appendix J requires that, if two consecutive periodic Type A tests fail to meet the criteria in section III.A.5.(b)(2), notwithstanding the periodic retest schedule of section III.D, a Type A test must be performed at each plant shutdown for refueling, or approximately every 18 months, whichever occurs first, until two consecutive Type A tests meet the criteria in section III.A.5.(b).

The exemption would allow both BSEP units to return to a normal testing frequency so the next Unit 1 Type A test would then be performed during the Reload 9 outage scheduled for March 1995 and the next Unit 2 test during the Reload 12 outage scheduled for March 1997.

In its letter dated October 19, 1993, requesting a one-time exemption from the schedular requirements of Section III.A.6.(b) of Appendix J, the licensee stated that each unit is currently in an accelerated testing condition due to as-found testing failures which, except for the 1987 Unit 1 test, were within L_a leakage limits but exceeded the current 0.75 L_a leakage limit of Section III.A.5.(b)(2) of Appendix J to 10 CFR Part 50. The licensee has based its request on the fact that the as-left limit of 0.75 L_a was specified in Appendix J to provide a margin for possible deterioration of the containment leak-tightness during the interval between Type A tests. The licensee states that this margin for deterioration is no longer needed when the as-found Type A test is performed. The licensee believes that it should be technically acceptable to use L_a as the as-found Type A test acceptance criterion. The licensee provides further justification in that the Type A tests are normally terminated as soon as the acceptance criteria are satisfied for economic reasons. The licensee believes that this process may result in

The one-time Exemption is enclosed. Should two consecutive periodic Type A tests fail to meet the criteria in Section III.A.5.(b)(2) in the future, notwithstanding the periodic retest schedule of section III.D, the licensee will be required to take the appropriate action specified in Section III.A.6(b) of Appendix J to 10 CFR Part 50. A copy of the Exemption is being filed with the Office of the Federal Register for publication.

In a letter dated October 19, 1993, CP&L also proposed an amendment to the BSEP Technical Specifications. This proposed amendment will be issued under separate cover.

Sincerely,

ORIGINAL SIGNED BY:

Patrick D. Milano, Sr. Project Manager
Project Directorate II-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Exemption to 10 CFR Part 50,
Appendix J

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leak rates that may not be indicative of actual primary containment leakage and that, if the test durations were extended, the quantified leakage would be less than that reported to the NRC.

The as-found Type A condition is represented by the leakage rate calculated by adding the differences between the as-found and as-left measured local leakage rates from each Type B and Type C test to the leakage rate measured in the Type A test. These Type B and Type C tests are usually conducted prior to conducting the Type A test. In the event that potentially excessive leakage paths are identified that would interfere with the satisfactory completion of a periodic Type A test and such paths are isolated during the test, the Type B or Type C as-found leakage rates measured on the isolated penetrations after the completion of the Type A test are added in to the Type A as-found leakage rate total. The as-left Type A condition is represented by the periodic Type A leakage rate after any required repairs and/or adjustments are made.

The staff reviewed the history of the Type A tests conducted at BSEP and found that the last two Type A as-found test results have been failures as noted below:

Unit 1 Type A Test History

Date of Test	As-Found Leak Rate (% wt. per day)	As-Left Leak Rate (% wt. per day)	0.75 L_a Limit (% wt. per day)
1987	Greater than L_a	.2150	0.375
1991	.4956	.3408	0.375

Unit 2 Type A Test History

Date of Test	As-Found Leak Rate (% wt. per day)	As-Left Leak Rate (% wt. per day)	0.75 L_a Limit (% wt. per day)
1991	.4042	.3552	0.375
1991	.4420	.3511	0.375

The staff noted that the last two test results for each unit has exceeded the acceptance criterion of 0.75 L_a required by Appendix J. Except for the 1987 test on Unit 1, the test results did not exceed the maximum allowable rate of 1.0 L_a. The licensee indicated the 1987 Unit 1 failure was caused by a containment penetration failure identified during the local leak rate testing. The licensee also stated the primary reason for failing the as-found limits is considered to be the leakage savings additions from Type C testing of valves and the Type B testing of penetrations, where leakage rates of repaired or replaced components are added into the integrated Type A test results.

The licensee stated the major contributors to the 1987 Unit 1 test failure were from (1) penetration X9A, Feedwater Loop A Injection, and (2) penetration X54E, Containment Monitor, CAC-AT-1262, Discharge. The licensee further stated the corrective actions to repair several valves associated with these penetrations were completed, and if the leakage from these penetrations was not considered, the as-found leakage savings would have been 0.049 % wt. per day. For the 1991 Unit 1 Type A test, the majors contributors were stated to be (1) penetration X9B, Feedwater Loop B Injection, (2) penetration X14, Reactor Water Cleanup (RWCU) Suction Line, and (3) penetration X10, Reactor Core Isolation Cooling Turbine Steam Supply Line. These penetrations were repaired by the replacement or repair of affected valves.

The licensee stated that the major contributors to the 1991 Unit 2 test failure were from (1) penetration X220, Torus Purge to Standby Gas, and (2) penetration X8, Main Steam Line Drain. The major contributors to the 1992 Unit 2 failure were from (1) penetration X14, RWCU Suction, and (2) penetration X12, Residual Heat removal Shutdown Cooling Suction. The licensee conducted repairs to several valves to correct the leakage through each of these penetrations.

The NRC staff has reviewed the licensee's request and basis and finds that there is adequate assurance that there will not be any significant undetected degradation in the primary containment leakage during the next Type A test interval in that the primary contributors to potentially excessive leakage paths will be measured during the required Type B and Type C tests. These latter tests will be conducted at least once during each 18-month refueling outage, but on no case at intervals greater than 2 years (Sections III.D.2 and III.D.3 of Appendix J to 10 CFR Part 50).

The staff agrees that the subject exemption request does not pose any undue risk to the public health and safety in that (1) the last as-left Type A test leakage rates were below 0.75 L_a and (2) the licensee will continue to demonstrate that the test results from the Type B and C local leak rate tests will be no greater than their specified values in the Brunswick Technical Specifications prior to restart after a refueling outage. Any potentially excessive leakage paths will continue to be repaired and/or adjusted prior to restart and at intervals of 18 months, thereby continuing to ensure the integrity of the containment. Based on these considerations, the staff concludes that the licensee's request for a one-time exemption to Section III.A.6(b) of Appendix J to 10 CFR Part 50 will ensure compliance with the

maximum permissible containment leakage rate specified in the Brunswick Technical Specifications and, thus, should be granted.

III.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, this exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. The Commission further determines that special circumstances, as provided in 10 CFR 50.12(a)(2)(ii), are present justifying the exemption; namely that the application of this regulation is not necessary to achieve the underlying purpose of the rule. The underlying purpose of the rule is to provide a margin for possible deterioration of the containment leak-tightness during the interval between Type A tests. The Licensee has provided adequate assurance, as set forth above, that the underlying purpose of the rule will be achieved in that the primary contributors to potentially excessive leakage paths will be measured during Type B and C testing. Further, the staff also finds that the protection provided by the licensee against potentially excessive containment leakage will not present an undue risk to the public health and safety. The application of the regulation is not necessary to assure the integrity of the containment in the event of a postulated design basis loss-of-coolant accident.

The Commission has hereby grants the one-time exemption with respect to the requirements od 10 CFR Part 50, Appendix J, Section III.A.5.(b)(2), to return both BSEP units to a normal Type A test frequency. Should two consecutive periodic Type A tests fail to meet the criteria in section III.A.5.(b)(2) in the future, notwithstanding the periodic retest schedule of

section III.D, the licensee will be required to take the appropriate actions as specified in Section III.A.6(b) of Appendix J to 10 CFR 50.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of the subject exemption will not have a significant effect on the quality of the human environment (59 FR 1569).

This Exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Steven A. Varga, Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this 11th day of January 1994