December 6, 1984

Docket No. 50-325

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Mr. E. E. Utley
Executive Vice President
Carolina Power & Light Company
Post Office Box 1551
Raleigh, North Carolina 27602

Dear Mr. Utley:

SUBJECT: EXEMPTION - APPENDIX J
EXTENSION FROM LOCAL LEAK RATE TESTS INTERVAL

Re: Brunswick Steam Electric Plant, Unit 1

The Commission has issued the enclosed Exemption from certain requirements of 10 CFR 50, Appendix J for the Brunswick Steam Electric Plant, Unit 1 in response to your letter dated September 4, 1984 as supplemented October 22, 1984. The exemption permits a one-time extension of the test period for certain valves from December 12, 1984 or later until the next refueling outage which is scheduled to begin on or before March 31, 1985. In addition, the main steam isolation valves test period is extended twelve days.

A copy of the related Safety Evaluation is enclosed.

A copy of the enclosed Exemption is being filed with the Office of the Federal Register for publication.

Sincerely,

Original signed by/

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosures:
1. Safety Evaluation
2. Exemption

cc w/enclosures:
See next page

DL:ORB#2	DL:ORB#2	DL:ORB#2	OELD	DL:AD-OR	DL:DER
SNorris:ajs	MGrotenhuis	DVassallo	M.KARMAN	GLainas	DEisenhut
11/23/84	11/26/84	11/26/84	11/30/84	12/3/84	11/6/84

Mr. E. E. Utley
Carolina Power & Light Company
Brunswick Steam Electric Plant, Units 1 and 2

cc:

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7590-01

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of	)	Docket No. 50-325
	)	
CAROLINA POWER & LIGHT COMPANY	)	
	)	
(Brunswick Steam Electric Plant, Unit 1)	)	

EXEMPTION

I.

The Carolina Power & Light Company (CP&L, the licensee) is the holder of Facility Operating License No. DPR-62 (the license) which authorizes the operation of the Brunswick Steam Electric Plant, Unit 1 at a steady-state power level not in excess of 2436 megawatts thermal. The facility consists of a boiling water reactor (BWR) located in Brunswick County, North Carolina. This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

II.

Section 50.54(o) of 10 CFR Part 50 requires that primary reactor containments for water cooled power reactors be subject to the requirements of Appendix J to 10 CFR Part 50. Appendix J contains the leakage test requirements, schedules, and acceptance criteria for tests of the leak-tight integrity of the primary reactor containment and systems and components which penetrate the containment. Section III.D of Appendix J

requires that local leak rate tests be performed during each reactor shutdown for refueling but in no case at intervals greater than two years. Appendix J was published on February 14, 1973 and in August 1975, each licensee was requested to review the extent to which its facility met the requirements.

In responses dated September 8, 1975, February 9, and September 16, 1977, and in an earlier letter dated May 2, 1975, the licensee responded to the August 5, 1975 letter from the staff and requested a number of specific exemptions from Appendix J. On November 5, 1977 Amendment Nos. 10 and 36 to DPR-71 and DPR-62, respectively, were issued. Those amendments granted specific exemptions from Appendix J and contained the Technical Specification changes for Appendix J consistent with these exemptions.

Brunswick Unit 1 was last shut down for refueling in December 1982 and the leak rate test was performed over a period of the next three or four months. Brunswick Unit 1 was restarted in July 1983 after a 7½ month outage and except for about one month, when an intergranular stress corrosion cracking (IGSCC) inspection was performed, it has operated essentially continuously since then, a total of about 14 months. By March 31, 1985 Unit 1 will have operated the full 18-month cycle and will be ready for refueling. However, the two year Type B and C local leak rate test periods end on various dates beginning about the middle of December 1984.

III.

On September 4, 1984, as supplemented October ??, 1984, the licensee requested an exemption from the local leak rate interval requirements of

Appendix J to 10 CFR 50 for about 164 valves and penetrations. An associated proposed Technical Specification (TS) change revises Section 4.6.1.2.d to allow a one-time only deferment of required Type B and C local leak rate tests (LLRTs) until the next refueling outage scheduled to begin on or before March 31, 1985. TS Section 4.6.1.2.d requires performance of LLRTs at least once per 24-month interval based on the requirements of 10 CFR 50, Appendix J, Section D, Part 2. Therefore, an amendment to the Technical Specifications and an exemption to 10 CFR 50 Appendix J was requested. A listing of the valves and penetrations involved in this request, their size (applicable to penetrations only), results of the previous LLRTs, and the current test due dates are provided in the application. These due dates range from December 1984 to March 1985. Additionally, the application proposes to change TS Section 4.6.1.2.f to allow a one-time only deferment of main steam line isolation valve (MSIV) leak testing until the March 31, 1985 refueling outage. The current due date for the MSIV leak testing is March 18, 1985.

As indicated above the intent of Appendix J was that isolation valves be tested during refueling outages but not to exceed 24 months. CP&L is presently scheduled to conduct a refueling outage for Brunswick Unit 1 beginning on or before March 31, 1985. The proposed amendment would allow these tests to be postponed until that refueling outage. Such an extension is desirable in order to maintain personnel exposures as-low-as-reasonably achievable (ALARA). With the current LLRT schedule, that is with no exemption, mid-cycle LLRTs would need to be performed again early in Brunswick Unit 1 Cycle 5 to return to a schedule which is coincident with

the Unit 1 refueling interval. Performance of mid-cycle LLRTs now and during the next fuel cycle would result in increased exposure of personnel of approximately 20 man-rem which is not consistent with CP&L's or NRC's ALARA policies.

In addition, the test interval for Type C tests in Appendix J was based on two years of expected exposure of components to service conditions. In the case of the valves referred to in the licensee's request, approximately eight months of the two-year period since the valves were last tested was spent in an extended maintenance outage during which the components were not exposed to an operating environment.

Technical Specification Section 4.6.1.2.f requires that the main steam line isolation valves be leak tested at least once per 18 months. The MSIVs were last tested on May 3, 1983. Utilizing the maximum surveillance period of 125 percent, the latest required performance date is March 18, 1985. The requested extension results in only an additional 12 days, or a 1.75 percent increase, in the maximum surveillance interval permitted by the TS.

IV.

The staff has reviewed the information contained in the above referenced letters and has concluded that it would be acceptable to postpone, until the March 31, 1985 scheduled refueling outage, the required LLRTs for approximately one-half of the Brunswick Unit 1 primary containment penetrations. These penetrations are identified in Table 1. The basis for our conclusion is contained in the Safety Evaluation dated

December 6, 1984 , which is available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C., and at the Southport, Brunswick County Library, 109 W. Moore Street, Southport, North Carolina 28461.

Based on our evaluation, the staff has concluded that the one-time extension of the test period for certain valves from December 12, 1984 or later to the next refueling outage scheduled to begin on or before March 31, 1985 will not adversely affect the health and safety of the public and that the requested exemption from the requirements of 10 CFR 50, Appendix J, Section D.2 for the valves listed in Attachment 1 should be granted.

V.

Accordingly, the Commission has determined that pursuant to 10 CFR 50.12, the exemption is authorized by law, will not endanger life or property or the common defense and security, is otherwise in the public interest. Therefore, the Commission hereby approves the following exemption request.

Exemption is granted from the requirement of 10 CFR 50, Appendix J, Section D.2, that requires a 24-month interval between local leak tests for the valves specified in Table 1 for the Brunswick Steam Electric Plant, Unit 1 from December 12, 1984 or later to the next refueling outage scheduled to begin on or before March 31, 1985.

Pursuant to 10 CFR 51.32, the Commission has determined that the issuance of this exemption will have no significant impact on the environment (49 FR 44336).

FOR THE NUCLEAR REGULATORY COMMISSION

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
Table 1

Dated at Bethesda, Maryland
this 6th day of December 1984.

TABLE 1

LIST OF BRUNSWICK 1 CONTAINMENT PENETRATIONS

WHOSE LLRTs CAN BE DELAYED UNTIL MARCH 31, 1985, REFUELING OUTAGE

Penetrations are identified by their Test No. (from October 22, 1984, licensee letter).

Test No.	Test No. (cont'd)
CAC-1	E11-26 thru E11-32
CAC-2	E21-1 thru E21-5
CAC-9 thru CAC-12	E21-7
CAC-14 thru CAC-26	E21-8
CAC-39 thru CAC-42	E41-2
CAC-45	E41-4
E11-1	E41-6
E11-2	E41-8
E11-4	E51-2 thru E51-4
E11-6	G31-2
E11-11	SA-1
E11-12	TIP-1 thru TIP-5
E11-15 thru E11-17	Also, the Main Steam Isolation Valves
E11-19	B21-F022A, F028A
E11-20	B21-F022B, F028B
E11-22	B21-F022C, F028C
E11-24	B21-F022D, F028D

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO THE ONE-TIME EXTENSION OF CERTAIN

VALVES FROM THE REQUIREMENTS OF APPENDIX J

CAROLINA POWER & LIGHT COMPANY

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

DOCKET NO. 50-325

1.0 Introduction

By letter dated September 4, 1984, as supplemented October 22, 1984 the Carolina Power & Light Company (CP&L, the licensee) requested an amendment to Facility Operating License No. DPR-71 for the Brunswick Steam Electric Plant (BSEP), Unit 1. The amendment would permit a one-time extension of the test period for Type B and C local leak rate tests for certain valves from December 12, 1984, or later, until the next refueling outage, which is currently scheduled to begin on or before March 31, 1985. In addition, the test period for the main steam isolation valves (MSIV) is extended twelve days.

2.0 Background

Brunswick Unit 1 was shut down for a refueling outage beginning in late 1983. The Type B and C local leak rate tests and MSIV tests were done over a period of the first three or four months beginning in December. This outage lasted longer than expected due to unforeseen events. In addition, the next operating cycle was extended from 12 months to 18 months. The combination of the extended outage and the extended cycle caused the two-year inspection interval to end before the current operating cycle. Since the winter electrical load peak period of the CP&L system occurs at the same time as the inspection period, it is desirable to postpone the inspections until the next refueling outage which is scheduled to begin on or before March 31, 1985. The longest extension would be for the valves tested December 12, 1982, a total of about 3½ months. The inspection period for the main steam isolation valves ends March 18, 1985 so the extension for those valves would be a matter of 12 days.

We have reviewed the licensee request and find that approximately one-half of the tests may be delayed until the refueling outage which begins on or before March 31, 1985. The basis of our conclusion is given in the following evaluation.

3.0 Evaluation

By letter dated September 4, 1984, from A. Cutter, CP&L, to D. Vassallo, NRC, the licensee requested an exemption from the requirements of 10 CFR

50, Appendix J, so as to extend the two year testing interval for most of the Brunswick Unit 1 primary containment penetrations. This request for exemption, if granted, would allow the licensee to perform the required Type B and C leak tests on containment penetrations during the next scheduled refueling outage, which the licensee has committed to begin no later than March 31, 1985.

In a follow-up letter, dated October 12, 1984, the licensee provided, for each primary containment penetration, information on the test results from previous local leak rate tests (LLRTs), whether the penetration could be tested during normal power operations, and the estimated dose to plant personnel while performing the leak tests if the tests were performed during the power run.

The staff has reviewed the information contained in the above referenced letters and has concluded that it would be acceptable to postpone, until the March 31, 1985 scheduled refueling outage, the required LLRTs for approximately one-half of the Brunswick Unit 1 primary containment penetrations. These penetrations are identified in Table 1. Accordingly, an exemption from the requirements of Appendix J, 10 CFR 50 should be granted for the valves identified in Table 1, until March 31, 1985.

The staff has concluded that the requested exemption should not be granted for the remaining containment penetrations. Our bases for this finding are the poor LLRT histories and/or the fact that the penetrations can be readily tested during normal plant operations. The previous LLRTs for a portion of these penetrations show a history of poor leak tightness. For many of these penetrations, the test pressure could not be maintained. The balance of these penetrations can be readily tested during normal plant operations, without affecting the safety of the plant or resulting in significant radiation exposure to the plant personnel performing the leak tests. Accordingly, the remaining containment penetrations whose LLRT requirements are also governed by 10 CFR 50, Appendix J, shall be tested in accordance with the time interval specified in Appendix J.

The staff's conclusion that some of the containment penetration LLRTs for Brunswick Unit 1 can be postponed until the March 31, 1985 refueling outage without presenting a significant safety concern is based on the following considerations:

1. During the past two year operating cycle, there was an extended maintenance outage of approximately eight months during which the plant components were not exposed to the normal operating temperature, pressure, and radiation conditions. The time interval of 24 months specified in Appendix J for Type B and C tests was based, in part, on the expected degradation of components exposed to the environment resulting from a full 24 months of normal plant operations. The total exposure time for the containment penetrations to the normal plant operating environment at Brunswick Unit 1 will be substantially less

than 24 months, including the time period involved in the extension to March 31, 1985.

2. The favorable results of previous LLRTs performed during past outages was a major factor in the staff's decision. Each penetration listed in Table 1 has a very good history of substantially lower than normal leak rates based on the previous LLRTs. These previous test results provide a high degree of assurance that an extension in the 24 month test interval requirement will not result in a significant decrease in the integrity of these penetrations.

3. The 24 month interval requirement for Type B and C penetrations is intended to be often enough to prevent significant deterioration from occurring and long enough to permit the LLRTs to be performed during plant outages. Leak testing of the penetrations during plant shutdown is preferable because of the lower radiation exposures to plant personnel. Moreover, some penetrations, because of their intended functions, cannot be tested at power operation. For penetrations that cannot be tested during power operation or those that, if tested during plant operation would cause a degradation in the plant's overall safety (e.g., the closing of a redundant line in a safety system), the increase in confidence of containment integrity following a successful test is not significant enough to justify a plant shutdown specifically to perform the LLRTs within the 24 month time period, as long as the penetrations are in compliance with Items 1 and 2 above.

4.0 Conclusion

Based on the above review, the staff concludes that extending the surveillance interval as described is acceptable for approximately one-half of the valves. The valves for which the surveillance interval may be extended to March 31, 1985 are identified in Table 1.

Enclosure:
Table 1

Principal Contributor: M. Fields

Dated: December 6, 1984

TABLE 1

LIST OF BRUNSWICK 1 CONTAINMENT PENETRATIONS

WHOSE LLRTs CAN BE DELAYED UNTIL MARCH 31, 1985, REFUELING OUTAGE

Penetrations are identified by their Test No. (from October 22, 1984, licensee letter).

Test No.
CAC-1
CAC-2
CAC-9 thru CAC-12
CAC-14 thru CAC-26
CAC-39 thru CAC-42
CAC-45
E11-1
E11-2
E11-4
E11-6
E11-11
E11-12
E11-15 thru E11-17
E11-19
E11-20
E11-22
E11-24

Test No. (cont'd)
E11-26 thru E11-32
E21-1 thru E21-5
E21-7
E21-8
E41-2
E41-4
E41-6
E41-8
E51-2 thru E51-4
G31-2
SA-1
TIP-1 thru TIP-5
Also, the Main Steam Isolation Valves
B21-F022A, F028A
B21-F022B, F028B
B21-F022C, F028C
B21-F022D, F028D