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Vice President  
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910 457-2498

September 8, 1994

SERIAL: BSEP 94-0354

U. S. Nuclear Regulatory Commission  
ATTENTION: Mr. Gus C. Lainas  
Assistant Director for Region II Reactors  
Division of Reactor Projects I/II  
Office of Nuclear Reactor Regulation  
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 ENFORCEMENT DISCRETION  
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

Dear Mr. Lainas:

The purpose of this letter is to request the Nuclear Regulatory Commission exercise enforcement discretion for the Brunswick Steam Electric Plant, Unit 1 (hereafter referred to as BNP). The proposed enforcement discretion concerns decreasing the frequency of surveillance testing required by Technical Specification 3.6.4.1, ACTION c with respect to position verification of the drywell-suppression chamber vacuum breakers.

BNP Unit 1 is experiencing a problem with the position indicator for the 1-CAC-X18C drywell-suppression chamber vacuum breaker. Based on testing that has been performed, the "closed" indicator for this valve is not functioning properly and is thereby inhibiting the ability to verify that the affected vacuum breaker is closed. Technical Specification 3.6.4.1, ACTION c requires that the performance of surveillance testing every 72 hours in accordance with Technical Specification 4.6.4.1.b whenever the position indicator of any drywell-suppression chamber vacuum breaker is inoperable.

This amendment request will revise the frequency for verifying the position of the drywell-suppression chamber vacuum breakers from at least once every 72 hours to at least once every 14 days. The proposed change is consistent with the testing frequency for this equipment that is stipulated in the Improved Boiling Water Reactor Standard Technical Specifications (NUREG-1433).

Enclosure 1 contains specific information in support of the request for enforcement discretion.

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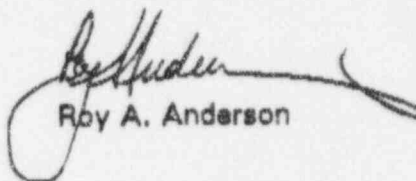
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Mr. Encl.

Mr. Gus. C. Lainas  
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The proposed enforcement discretion is being requested to allow sufficient time for Carolina Power & Light Company to prepare and submit and the NRC to review and approve a expedited license amendment request. Carolina Power & Light Company requests the NRC approve the use of the enforcement discretion effective on Sunday, September 11, 1994 at 12 Noon. Carolina Power & Light Company will submit a request for an exigent license amendment by the close of business on Friday, September 9, 1994.

Please refer any questions regarding this submittal to Mr. R. P. Loprinre at (910) 457-2212.

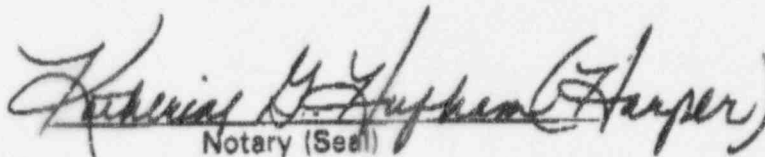
Very truly yours,

  
Roy A. Anderson

WRM/wrm

Enclosures

Roy 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, and agents of Carolina Power & Light Company.

  
Notary (Seal)

My commission expires:

6/3/98

pc: Mr. Gus C. Lainas, Regional Administrator, NRC Region II  
Mr. P. D. Milano, NRR Senior Project Manager - Brunswick Units 1 and 2  
Mr. C. A. Patterson, NRC Senior Resident Inspector - Brunswick Units 1 and 2  
Mr. Dayne H. Brown, State of North Carolina  
The Honorable H. Wells, Chairman - North Carolina Utilities Commission  
NRC Document Control Desk

Mr. Gus. C. Lainas  
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bpc: Mr. D. B. Hunt  
Mr. W. R. Murray  
Subject File B-X-0333.8

## ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62  
REQUEST FOR ENFORCEMENT DISCRETION  
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

REQUIREMENTS FOR WHICH ENFORCEMENT DISCRETION IS REQUESTED:

Technical Specification 3.6.4.1, ACTION c requires the performance of surveillance testing every 72 hours in accordance with Technical Specification 4.6.4.1.b whenever the position indicator of any drywell-suppression chamber vacuum breaker is inoperable. Technical Specification 4.6.4.1.b requires that each drywell-suppression chamber vacuum breaker be demonstrated to be OPERABLE whenever the vacuum breaker is in the open position by conducting a test that verifies that the differential pressure is maintained greater than one-half ( $\frac{1}{2}$ ) the initial differential pressure for one hour without makeup.

The proposed enforcement discretion would decrease the frequency for performing the surveillance testing specified in Technical Specification 3.6.4.1, ACTION c from "at least once per 72 hours" to "at least once per 14 days." The Improved Standard Technical Specifications for Type 4 Boiling Water Reactors (NUREG-1433 for BWR-4s) already include surveillance requirements specifying the verification of vacuum breaker position at least once per 14 days. If the position indication is inoperable, the Improved Standard Technical Specifications require that the vacuum breakers be verified to be closed through alternates means (i.e., a differential pressure test). Thus, the change to the testing frequency specified in Technical Specification 3.6.4.1, ACTION c is consistent with the guidance of the BWR-4 Improved Standard Technical Specifications.

The revised wording for Technical Specification 3.6.4.1, ACTION c is as follows:

With the position indicator of any drywell-suppression chamber vacuum breaker inoperable, the provisions of Specification 3.0.4 are not applicable, and operation may continue provided the surveillance requirements of Specification 4.6.4.1.b are performed within 8 hours and at least once per 14 days thereafter, until the inoperable position indicator is returned to OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

DISCUSSION OF CIRCUMSTANCES LEADING TO THE REQUEST:

On September 3, 1994 at approximately 2200 hours, the "closed" position indication for the 1-CAC-X18C vacuum breaker was lost. Since that time, CP&L has been performing a differential pressure drop test in accordance with Technical Specification 4.6.4.1.b at least once per 72 hours.

Based on the results of differential pressure tests, CP&L has demonstrated the 1-CAC-X18C vacuum breaker is closed and that the problem being experienced is the result of an inoperable position indicator. The drywell-suppression chamber vacuum breakers are located inside of the primary containment suppression chamber (i.e., torus), an area that is not normally accessible during unit operation due to the inerted (i.e., nitrogen) atmosphere that is maintained for post-accident combustible gas control (Reference: Technical Specification 3.6.6.3.). Therefore, CP&L is unable to repair the inoperable position indicator without an unscheduled unit shutdown.

CP&L could not have reasonably foreseen that the 1-CAC-X18C vacuum breaker position indicator would fail. Since restart of Unit 1 and Unit 2, we have not experienced any additional vacuum breaker position indicator problems. It should be noted that the drywell-suppression chamber vacuum breaker position indicators have demonstrated a high degree of reliability.

#### SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES:

The Brunswick Plant design has ten (10) vacuum relief breakers to equalize pressure between the drywell and the suppression chamber. This system is intended to maintain the structural integrity of the primary containment under conditions of large differential pressures by bleeding non-condensable gases from the suppression chamber into the drywell. The valves automatically open any time the vacuum setting is exceeded; no failure of the position switches will prevent the valves from operating.

The vacuum breaker valves are furnished with pneumatic operators and limit switches to allow remote cycling with positive indication of valve pallet displacement. Failure of the vacuum breaker valves in a partially open position is unlikely since the valves are provided with magnetic latches to assure positive closing.

There are an adequate number of vacuum breakers between the drywell and the suppression chamber to provide redundancy such that unit operation may continue with up to two (2) inoperable vacuum breakers secured in the closed position. The drywell-to-suppression chamber vacuum breakers must not be inoperable in the open position since this would allow bypassing and impact the pressure suppression capabilities of the suppression pool during a loss-of-coolant accident.

A sketch depicting the internal configuration of the vacuum breaker is enclosed.

At present, CP&L is performing a differential pressure test at least once per 72 hours to verify the affected vacuum breaker is closed. Based on the currently scheduled Unit 1 refueling outage start date of April 1, 1995, continued performance of the differential pressure test for the remainder of the current operating cycle would subject the Unit 1 drywell-suppression chamber vacuum breakers to at least 68 additional tests (based on the 72 hour test frequency). In contrast, the proposed 14 day testing frequency would result in the performance of only 15 additional tests. Therefore, performance of the additional tests results in the usage of 255,000 to 424,000 standard cubic feet of nitrogen. As a



result, the amount of primary containment purging operations must be similarly increased to maintain the containment pressure within Technical Specification limits.

The differential pressure test (PT-2.3.1A) requires aligning the nitrogen inerting system and adding approximately 5,000 to 8,000 standard cubic feet of nitrogen to the drywell at a nominal flow rate of 1,000 cfm with the torus vented. The drywell is pressurized to approximately 1.1 psig. Once the pressure is stabilized at approximately 1.0 psig, the pressure drop is monitored for one hour. This test verifies that the differential pressure is maintained greater than one-half the initial differential pressure for one hour without nitrogen makeup.

The high drywell pressure setpoint specified in Technical Specification Table 2.2.1-1, Item 7 is 2.0 psig (the actual setpoint is 1.8 psig). If drywell pressure reaches or exceeds this setpoint, a reactor scram and Group 1 isolation will occur. Performing the differential pressure test described above involves a rapid pressurization of the drywell to approximately one (1) psig, which significantly reduces the operational margin that is normally maintained to the high drywell pressure setpoint. Reducing the testing frequency from 72 hours to at least once per 14 days will reduce the opportunity for incurring an unnecessary plant transient. CP&L believes that continued testing of the drywell-suppression chamber vacuum breakers on the 72 hour frequency will not provide additional assurance that the vacuum breakers are capable of performing their design function. As such, the 72 hour frequency of testing does not provide a health and safety benefit to the public commensurate with the increased potential for incurring a unnecessary plant transient as a result of the more frequent testing.

Two differential pressure tests have been performed to date. During the first differential pressure test (performed on September 4, 1994), the pressure inside the drywell dropped from 1.1 to 0.88 psig. During the second differential pressure test (performed on September 7, 1994), the pressure inside the drywell dropped from 1.05 to 0.93 psig. These tests demonstrate that the vacuum breaker is closed and is capable of performing its design function.

While performing the differential pressure tests, Maintenance and Engineering Support personnel observed that during the depressurization/pressure equalization phase of the test, the "closed" position indication for the affected vacuum breaker would initially indicate the valve being closed. As the differential pressure decreases, the "closed" position indication was lost. Based on the vacuum breaker configuration/design, the position indication (i.e., the limit switch within the valve) is believed to initially be making contact, but this contact is being lost as the pressure decreases and the vacuum breaker disk thrust on the rubber seating surface and limit switch diminishes. This further supports the conclusion that the vacuum breaker is closed properly, and that the problem being experienced is limited to the position indicator.

Relaxation of the frequency for verifying the position of the drywell-suppression chamber vacuum breakers of the existing Technical Specification 3.6.4.1, ACTION c from at least once every 72 hours to at least once every 14 days will not affect the ability of the drywell-suppression chamber vacuum breakers to perform their intended safety function. The extended frequency provides adequate assurance that the vacuum breakers will

perform their intended safety function. Each drywell-suppression chamber vacuum breaker will continue to be demonstrated OPERABLE and closed at least once per 31 days and after any discharge of steam to the suppression chamber in accordance with Technical Specification 4.6.4.1.e.

The proposed enforcement discretion would decrease the frequency for performing the surveillance testing specified in Technical Specification 3.6.4.1, ACTION c from "at least once per 72 hours" to "at least once per 14 days." The Improved Standard Technical Specifications for Type 4 Boiling Water Reactors (NUREG-1433 for BWR-4s) already include surveillance requirements specifying the testing and verification, through an alternate means, at least once per 14 days that each vacuum breaker is closed if the position indicating instruments for the affected vacuum breaker are inoperable. Thus, the change to the testing frequency specified in Technical Specification 3.6.4.1, ACTION c is consistent with the guidance of the BWR-4 Improved Standard Technical Specifications.

In a policy statement concerning enforcement actions that was published in the March 17, 1993 Federal Register (58 FR 14308), the NRC noted that "... circumstances may arise where a licensee's compliance with a Technical Specification (TS) Limiting Condition for Operation would involve an unnecessary plant transient or performance of testing, inspection, or system realignment that is inappropriate with the plant specific conditions ... without a corresponding health and safety benefit" (emphasis added). CP&L believes that continued testing of the drywell-suppression chamber vacuum breakers on a 72 hour frequency will not provide additional assurance that the vacuum breakers are capable of performing their design function and, as such, that the 72 hour frequency of testing does not provide a health and safety benefit to the public.

#### DISCUSSION OF COMPENSATORY MEASURES:

No additional compensatory measures beyond those required by the Technical Specifications are necessary. CP&L will continue to test the drywell-suppression chamber vacuum breakers after any discharge of steam to the suppression chamber from any source.

Carolina Power & Light Company will repair the position indicator for the 1-CAC-X18C vacuum breaker during the next forced outage of sufficient duration to permit repairs, or during the next scheduled Unit 1 outage. Currently, the next scheduled Unit 1 outage is the refueling outage that will begin on April 1, 1995.

#### DISCUSSION OF JUSTIFICATION FOR PROPOSED DURATION:

The proposed enforcement discretion is being requested to allow sufficient time for Carolina Power & Light Company to prepare and submit and the NRC review and approve a expedited license amendment request. This amendment request will permanently revise the frequency for verifying the position of the drywell-suppression chamber vacuum breakers from at least once every 72 hours to at least once every 14 days.

Relaxation of the frequency for verifying the position of the drywell-suppression chamber vacuum breakers of the existing Technical Specification 3.6.4.1, ACTION c from at least once every 72 hours to at least once every 14 days will not affect the ability of the drywell-suppression chamber vacuum breakers to perform their intended safety function. The extended frequency provides adequate assurance that the vacuum breakers will perform their intended safety function. Each drywell-suppression chamber vacuum breaker will continue to be demonstrated OPERABLE and closed at least once per 31 days and after any discharge of steam to the suppression chamber in accordance with Technical Specification 4.6.4.1.a.

#### SIGNIFICANT HAZARDS CONSIDERATION:

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. Carolina Power & Light Company has reviewed this proposed enforcement discretion request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

1. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change revises the surveillance requirements associated with inoperable position indication for drywell-suppression chamber vacuum breakers. No safety-related equipment, safety function or plant operations will be altered as a result of the proposed change. The change does not affect the design, materials, or construction standards applicable to the vacuum breakers or their position indication instrumentation.

Relaxation of the frequency for verifying the position of the drywell-suppression chamber vacuum breakers of the existing Technical Specification 3.6.4.1, ACTION c from at least once every 72 hours to at least once every 14 days will not affect the ability of the drywell-suppression chamber vacuum breakers to perform their intended safety function. The extended frequency provides adequate assurance that the vacuum breakers will perform their intended safety function. Each drywell-suppression chamber vacuum breaker will continue to be demonstrated OPERABLE and closed at least once per 31 days and after any discharge of steam to the suppression chamber in accordance with Technical Specification 4.6.4.1.a.

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

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

As stated above, no safety-related equipment, safety function or plant operations will be altered as a result of the proposed change. The change does not affect the



design, materials, or construction standards applicable to the vacuum breakers or their position indication instrumentation.

Relaxation of the frequency for verifying the position of the drywell-suppression chamber vacuum breakers of the existing Technical Specification 3.6.4.1, ACTION c from at least once every 72 hours to at least once every 14 days will not affect the ability of the drywell-suppression chamber vacuum breakers to perform their intended safety function.

As such, the proposed change cannot create the possibility of a new or different kind of accident from any accident previously evaluated

3. The proposed change does not involve a significant reduction in the margin of safety.

The proposed change does not involve any changes to the plant design or operation. Therefore, no margins of safety, as defined by the plant's accident analyses, are impacted. Relaxation of the frequency for verifying the position of the drywell-suppression chamber vacuum breakers of the existing Technical Specification 3.6.4.1, ACTION c from at least once every 72 hours to at least once every 14 days will not affect the ability of the drywell-suppression chamber vacuum breakers to perform their intended safety function. The extended frequency provides adequate assurance that the vacuum breakers will perform their intended safety function. Each drywell-suppression chamber vacuum breaker will continue to be demonstrated OPERABLE and closed at least once per 31 days and after any discharge of steam to the suppression chamber in accordance with Technical Specification 4.6.4.1.a.

In addition, performance of Technical Specification 4.6.4.1.b requires pressurization of the drywell to approximately 1.0 psig and then verifying that the differential drywell to suppression chamber pressure is maintained greater than one-half the initial differential pressure for one hour without nitrogen makeup. During this evolution actual pressure will increase as high as 1.1 psig before stabilizing. The Drywell Pressure - High setpoint, which initiates a reactor scram and a Group 1 isolation, is less than or equal to 2.0 psig (the actual setpoint is 1.8 psig). As such, performance of this evolution once per 72 hours unnecessarily risks a plant transient without providing a significant increase in the level of safety gained by performing the verification on a 14 day frequency.

Based on the above reasoning, the proposed change does not involve a significant reduction in the margin of safety.

#### ENVIRONMENTAL EVALUATION:

10 CFR 51.22(c)(9) provides criteria for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environment assessment. Carolina Power & Light Company has reviewed this request and determined that it meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.91(c)(9) and that this request does not involve irreversible environmental consequences. Pursuant to

10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with granting this enforcement discretion. The basis for this determination is as follows:

1. As demonstrated in the above significant hazards analysis, the proposed enforcement discretion does not involve a significant hazards consideration.
2. The proposed enforcement discretion does not result in a significant change in the types or a significant increase in the amounts of any effluent that may be released offsite. The proposed enforcement discretion does not introduce any new equipment nor does it require any existing equipment or systems to perform a different type of function than they are presently designed to perform. The proposed enforcement discretion does not alter the function of the instrumentation and will ensure that the consequences of any previously evaluated accident do not increase. Therefore, CP&L has concluded that there will not be a significant increase in the types or amounts of any effluent that may be released offsite and, as such, does not involve irreversible environmental consequences beyond those already associated with normal operation.
3. The proposed enforcement discretion does not result in a significant increase in individual or cumulative occupational radiation exposure.

#### PNSC APPROVAL:

This request for enforcement discretion has been reviewed and approved by the Brunswick Plant Nuclear Safety Committee (PNSC) on September 8, 1994.

## Vacuum Breaker Cutaway

