CP&L

Carolina Power & Light Company

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United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-324/LICENSE NO. DPR-62
REQUEST FOR LICENSE AMENDMENT
18 MONTH SURVEILLANCE INTERVAL EXTENSIONS

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 the Technical Specifications for the Brunswick Steam Electric Plant (BSEP), Unit 2.

The proposed amendment requests a one-time only extension of the 18 month surveillance interval logic system functional tests (Technical Specification 4.3.3.2) and response time tests (Technical Specification 4.3.3.3) for the following Emergency Core Cooling System (ECCS) Actuation Instrumentation: (1) the Core Spray System function (Item 1 in Technical Specification Table 3.3.3-3) and (2) the Low Pressure Coolant Injection Mode of RHR System function (Item 2 in Technical Specification Table 3.3.3-3). In addition, the proposed amendment requests a one-time only extension of the 18 month surveillance interval channel calibration test for the 4160 volt Emergency Bus Loss of Power function (Item 5 of Technical Specification Table 4.3.3-1). The proposed amendment also requests a one-time only extension of the 18 month surveillance interval for Technical Specification required surveillances associated with the Service Water System (Technical Specification 4.7.1.2.b, Valve Actuation on an ECCS Signal).

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 the proposed Technical Specification pages for Unit 2.

As discussed above, the Technical Specifications surveillances for which extensions are being requested have an 18 month interval (22.5 months including 25 percent extension allowed by Technical Specification 4.0.2). Because of the long Unit 2 recirculation pipe replacement outage, these surveillances all become due prior to the currently scheduled September 7, 1991 start of the Unit 2 Reload 9 outage. These surveillances are planned to be performed during the Unit 2 surveillance testing outage scheduled to begin in June 1991. However, due to economic and ALARA considerations, the Company is taking actions that may obviate the need for the mid-cycle surveillance testing outage. Therefore, in order to support this effort, CP&L requests that the NRC approve the requested license amendment by May 15, 1991.

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The requested one-time extensions will be in effect until the end of the Unit 2 Reload 9 outage, currently scheduled to begin on September 7, 1991 and end on November 21, 1991. These extensions allow the flexibility to schedule surveillances in appropriate outage windows, thereby enhancing safety of the shutdown unit without adversely affecting the outage schedule.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of North Carolina with a copy of the proposed license amendment.

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.

CP&L recognizes that, due to extended operating cycles and the possibility of prolonged refueling outages, an 18 month surveillance interval is impractical. The Company intends to seek permanent extension of these intervals to 24 months upon issuance of generic guidance by the NRC expected in the first quarter of 1991. Please refer any questions regarding this submittal to Mr. M. R. Oates at (919) 546-6063.

Yours very truly,

G. E. Vaughn
Vice President
Nuclear Services Department

GEV/MAT

Enclosures:
1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Technical Specification Pages - Unit 2

cc: Mr. Dayne H. Brown
Mr. S. D. Ebneter
Mr. N. B. Le
Mr. R. L. Prevatte

G. E. Vaughn, 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 2, 1991

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2
NRC DOCKET 50-324
OPERATING LICENSE DPR-62
REQUEST FOR LICENSE AMENDMENT
18 MONTH SURVEILLANCE INTERVAL EXTENSIONS

BASIS FOR CHANGE REQUEST

Proposed Change

The proposed amendment requests a one-time only extension of the 18 month surveillance interval logic system functional tests (Technical Specification 4.3.3.2) and response time tests (Technical Specification 4.3.3.3) for the following Emergency Core Cooling System (ECCS) Actuation Instrumentation which are normally performed in conjunction with 18 month diesel generator surveillance testing:

1. The Core Spray System function (Item 1 of Technical Specification Table 3.3.3-3)

2. The Low Pressure Coolant Injection Mode of RHR System function (Item 2 of Technical Specification Table 3.3.3-3)

In addition, the proposed amendment requests a one-time only extension of the 18 month surveillance interval channel calibration test for the 4160 volt Emergency Bus Loss of Power function (Item 5 of Technical Specification Table 4.3.3-1)

The proposed amendment also requests a one-time only extension of the 18 month surveillance interval for Technical Specification required surveillances associated with the Service Water System (Technical Specification 4.7.1.2.b, Valve Actuation on an ECCS Signal).

Background

The Technical Specification surveillances for which extensions are being requested have an 18 month interval (22.5 months including the 25 percent extension allowed by Technical Specification 4.0.2). These surveillances all become due prior to the currently scheduled September 7, 1991 start of the Unit 2 Reload 9 outage. These surveillances are planned to be performed during the Unit 2 surveillance testing outage scheduled to begin in June 1991. However, due to economic and ALARA considerations, the Company is taking actions that may obviate the need for the mid-cycle surveillance testing outage.

The proposed change extends the Technical Specification surveillance intervals associated with ECCS Actuation Instrumentation and the Service Water System. These extensions will synchronize the 18 month surveillances with the current Unit 2 refueling outage schedule. Several factors have caused the disparity between the Unit 2 outage schedule and the 18 month surveillance schedule. Surveillances become due 18 months (plus up to 25 percent per Technical Specification 4.0.2) after completion of the test. All of the Technical Specification surveillance requirements associated with this change are performed coincident with diesel generator surveillance testing. Typically, these surveillances are performed near the beginning of a refueling outage due to the availability of an outage window. This was the case for the Unit 2 Reload 8 outage during which portions of the recirculation piping were replaced. The pipe replacement effort resulted in a 23 week outage. The Brunswick cores are designed to provide extended operating cycles. The current Unit 2 core can provide an 18 month operating cycle with an assumed availability of 85 percent. Due to the extended length of the Unit 2 Reload 8 outage and the planned 18 month operating cycle, the affected Technical Specification surveillance requirements become due prior to the currently scheduled September 7, 1991 start of the Unit 2 Reload 9 outage.

The proposed amendment allows a one-time only extension of the surveillance interval associated with (I) ECCS Actuation Instrumentation - Technical Specifications 4.3.3.2 and 4.3.3.3 (Table 3.3.3-3 Items 1 and 2, and Table 4.3.3-1 Item 5) and (II) Service Water System - Technical Specification 4.7.1.2.b in order to allow performance of the required surveillances during the upcoming Unit 2 Reload 9 outage. This will eliminate the need for the Unit 2 mid-cycle surveillance outage and provide ALARA savings by performing the required surveillances only once instead of possibly twice (once during the mid-cycle surveillance outage and again during the Unit 2 Reload 9 outage to re-synchronize the surveillance interval with the operating cycle).

Basis

I. ECCS Actuation Instrumentation - Technical Specifications 4.3.3.2 and 4.3.3.3 (Table 3.3.3-3 Items 1 and 2, and Table 4.3.3-1 Item 5).

The ECCS Actuation Instrumentation 18 month interval surveillances required by Technical Specifications 4.3.3.2 and 4.3.3.3 associated with Items 1, 2, and 5 of Table 4.3.3-1 are normally performed in conjunction with diesel generator testing during refueling outages. Technical Specifications 4.3.3.2 and 4.3.3.3 require simulation of automatic operation of all ECCS Actuation Instrumentation channels. These tests include calibration of time delay relays and timers, demonstration of proper ECCS Actuation Instrumentation response times, and channel calibration of ECCS Actuation Instrumentation loss of power trip functions. These surveillances become overdue on July 29, 1991 (this includes the 25 percent extension allowed by Technical Specification 4.0.2).

The stroking of valves and the operation of pumps associated with the testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 is performed on a quarterly basis during the performance of Periodic Tests (PTs) 7.2.4a, 7.2.4b, 8.2.2b, and 8.2.2c. These Periodic Tests determine the operability of the equipment associated with the Low Pressure Coolant Injection Mode of RHR System and the Core Spray System functions. During the performance of these tests, the associated Core Spray System and Residual Heat Removal System valves are stroked and timed and the pumps are operated. The last performance of the 18 month surveillance interval tests were completed satisfactorily in September 1989. The recent completion in February 1991 of the ECCS diesel generator logic test verified proper function of a portion of the logic covered by the subject Technical Specifications.

The Core Spray System and Low Pressure Coolant Injection Mode of the RHR System instrumentation covered by Items 1 and 2 of Table 3.3.3-3 have associated daily channel checks performed which provide a qualitative assessment of the operability of the instruments. These instruments also have associated monthly channel functional tests which use a simulated signal to verify the operability of the instrumentation. Ongoing performance of these tests throughout the proposed extension period will provide continued confidence that these instruments are capable of performing their intended safety function.

The Loss of Power instrumentation covered by Item 5 of Table 4.3.3-1 have an associated monthly channel functional test performed to verify the operability of the 4160 volt degraded voltage instrumentation. Ongoing performance of this test throughout the extension period will provide continued confidence that the Loss of Power instrumentation is capable of performing its intended safety function. Testing of the loss of voltage function during unit operation is impractical since such testing would require de-energization of each 4160 volt emergency bus.

Over the past five years, there have been no valve or pump failures associated with the diesel generator load testing of the ECCS actuation instrumentation logic. This demonstrates a high degree of reliability for the actuation instrumentation and its associated equipment.

Based on the above reasoning, extending the 18 month surveillance interval required by Technical Specifications 4.3.3.2 and 4.3.3.3 for Items 1 and 2 of Table 3.3.3-3 and Item 5 of Table 4.3.3-1 from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will not significantly affect the ability of the associated safety systems to perform their intended safety function.

II. Service Water System - Technical Specification 4.7.1.2.b.

Technical Specification 4.7.1.2.b requires a verification that each automatic valve servicing safety related equipment actuates to its correct position on the appropriate ECCS actuation test signal. This surveillance becomes due on July 29, 1991 (this includes 25 percent extension allowed by Technical Specification 4.0.2). The proposed amendment extends this due date until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991.

The automatic valves which will be tested during performance of Technical Specification 4.7.1.2.b surveillance requirements are the diesel generator 3 and 4 jacket water cooler service water supply valves (2-SW-V212 and 2-SW-V213). The automatic function of these valves is also tested on a monthly basis during the performance of Periodic Tests 12.2c and 12.2d (diesel generator loading tests). During the performance of these loading tests, the service water supply valves automatically open upon diesel generator start.

Over the past five years, there have been no valve failures associated with performance of Technical Specification 4.7.1.2.b or the monthly diesel generator loading tests. This demonstrates a high degree of reliability. In the unlikely event that a jacket water cooler service water supply valve were to fail to actuate, automatic actuations take place which will supply service water to diesel generators 3 and 4 from Unit 1.

Based on the above monthly testing of valve actuations as part of diesel generator loading tests, the high degree of reliability demonstrated by the valves over the past five years, and a secondary supply of service water from Unit 1, extending the due date for Technical Specification 4.7.1.2.b from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will not significantly affect the ability of the associated safety systems to perform their intended safety function.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2
NRC DOCKET 50-324
OPERATING LICENSE DPR-62
REQUEST FOR LICENSE AMENDMENT
18 MONTH SURVEILLANCE INTERVAL EXTENSIONS

BASIS FOR CHANGE REQUEST

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. 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 requests a one-time only extension of the 18 month surveillance interval logic system functional tests (Technical Specification 4.3.3.2) and response time tests (Technical Specification 4.3.3.3) for the following Emergency Core Cooling System (ECCS) Actuation Instrumentation which are normally performed in conjunction with 18 month diesel generator surveillance testing:

1. The Core Spray System function (Item 1 of Technical Specification Table 3.3.3-3)

2. The Low Pressure Coolant Injection Mode of RHR System function (Item 2 of Technical Specification Table 3.3.3-3)

In addition, the proposed amendment requests a one-time only extension of the 18 month surveillance interval channel calibration test for the 4160 volt Emergency Bus Loss of Power function (Item 5 of Technical Specification Table 4.3.3-1)

The proposed amendment also requests a one-time only extension of the 18 month surveillance interval for Technical Specification required surveillances associated with the

Service Water System (Technical Specification 4.7.1.2.b, Valve Actuation on an ECCS Signal).

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.

   I. ECCS Actuation Instrumentation - Technical Specifications 4.3.3.2 and 4.3.3.3 (Table 3.3.3-3 Items 1 and 2, and Table 4.3.3-1 Item 5).

   A one-time extension of the surveillance testing requirements of Technical Specifications 4.3.3.2 and 4.3.3.3 for Items 1 and 2 of Table 3.3.3-3 and Item 5 of Table 4.3.3-1 will not result in a significant increase in the probability of the associated safety systems failing to perform their intended safety function.

   The stroking of valves and the operation of pumps associated with the testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 is done on a quarterly basis during the performance of Periodic Tests (PTs) 7.2.4a, 7.2.4b, 8.2.2b, and 8.2.2c. These Periodic Tests determine the operability of the equipment associated with the Low Pressure Coolant Injection Mode of RHR System and the Core Spray System functions. During the performance of these tests, the associated Core Spray System and Residual Heat Removal System valves are stroked and timed and the pumps are operated. The last performance of the 18 month surveillance interval tests were completed satisfactorily in September 1989. The recent completion in February 1991 of the ECCS diesel generator logic test verified proper function of a portion of the logic covered by the subject Technical Specifications.

   The Core Spray System and Low Pressure Coolant Injection Mode of the RHR System instrumentation covered by Items 1 and 2 of Table 3.3.3-3 have associated daily channel checks performed which provide a qualitative assessment of the operability of the instruments. These instruments also have associated monthly channel functional tests which use a simulated signal to verify the operability of the instrumentation. Ongoing performance of these tests throughout the proposed extension period will provide continued confidence that these instruments are capable of performing their intended safety function.

   The Loss of Power instrumentation covered by Item 5 of Table 4.3.3-1 has an associated monthly channel functional test performed to verify the operability of

the 4160 volt degraded voltage instrumentation. Ongoing performance of this test throughout the extension period will provide continued confidence that the Loss of Power instrumentation is capable of performing its intended safety function.

Over the past five years, there have been no valve or pump failures associated with the diesel generator load testing of the ECCS actuation instrumentation logic. This demonstrates a high degree of reliability for the actuation instrumentation and its associated equipment.

Based on daily and monthly instrumentation tests performed, the quarterly testing of valve actuation and pump operation, and the historically high degree of reliability of the ECCS actuation instrumentation, extending the due date for surveillance testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 for Items 1 and 2 of Table 3.3.3-3 and Item 5 of Table 4.3.3-1 from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will not involve a significant increase in the probability or consequences of an accident previously evaluated.

II. Service Water System - Technical Specification 4.7.1.2.b.

A one-time extension of Technical Specification 4.7.1.2.b surveillance requirements will not result in a significant increase in the probability of the associated safety systems failing to perform their intended safety function. Technical Specification 4.7.1.2.b requires a verification that each automatic valve servicing safety related equipment actuates to its correct position on the appropriate ECCS actuation test signal. This surveillance becomes due on July 29, 1991 (this includes 25 percent extension allowed by Technical Specification 4.0.2). The proposed amendment extends this due date until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991.

The automatic valves which will be tested during performance of Technical Specification 4.7.1.2.b surveillance requirements are the diesel generator 3 and 4 jacket water cooler service water supply valves (2-SW-V212 and 2-SW-V213). The automatic function of these valves is also tested on a monthly basis during the performance of Periodic Tests 12.2c and 12.2d (diesel generator loading tests). During the performance of these loading tests the service water supply valves automatically open upon diesel generator start.

Over the past five years, there have been no valve failures associated with performance of Technical Specification 4.7.1.2.b or the monthly diesel generator loading tests. This demonstrates a high degree of reliability. In the unlikely event that a jacket water cooler service water supply valve were to fail to actuate,

automatic actuations take place which will supply service water to diesel generators 3 and 4 from Unit 1.

Based on the above monthly testing of valve actuation as part of diesel generator loading tests, the high degree of reliability demonstrated by the valves over the past five years, and a secondary supply of service water from Unit 1, extending the due date for Technical Specification 4.7.1.2.b from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will 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.

I. ECCS Actuation Instrumentation - Technical Specifications 4.3.3.2 and 4.3.3.3 (Table 3.3.3-3 Items 1 and 2, and Table 4.3.3-1 Item 5).

The proposed amendment only extends the due date for surveillance testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 for Items 1 and 2 of Table 3.3.3-3, and Item 5 of Table 4.3.3-1 from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991. As such, there is no change to the plant or its manner of operation. Also, there are no changes to the surveillance acceptance criteria. Therefore, the proposed amendment cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

II. Service Water System - Technical Specification 4.7.1.2.b.

The proposed amendment only extends the due date for Technical Specification 4.7.1.2.b required surveillances from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991. There is no change to the plant or its manner of operation. Also, there are no changes to the surveillance acceptance criteria. Therefore, the proposed amendment cannot create the possibility of a new or different kind of accident from any accident previously evaluated.

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

I. ECCS Actuation Instrumentation - Technical Specifications 4.3.3.2 and 4.3.3.3 (Table 3.3.3-3 Items 1 and 2, and Table 4.3.3-1 Item 5).

A one-time extension of Technical Specifications 4.3.3.2, 4.3.3.3, and Table 4.3.3-1 Item 5 surveillance requirements will not result in a significant increase in the probability of the associated safety systems failing to perform their intended safety function.

The stroking of valves and the operation of pumps associated with the testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 is done on a quarterly basis during the performance of Periodic Tests (PTs) 7.2.4a, 7.2.4b, 8.2.2b, and 8.2.2c. These Periodic Tests determine the operability of the equipment associated with the Low Pressure Coolant Injection Mode of RHR System and the Core Spray System functions. During the performance of these tests, the associated Core Spray System and Residual Heat Removal System valves are stroked and timed and the pumps are operated. The last performance of the 18 month surveillance interval tests were completed satisfactorily in September 1989. The recent completion in February 1991 of the ECCS diesel generator logic test verified proper function of a portion of the logic covered by the subject Technical Specifications.

The Core Spray System and Low Pressure Coolant Injection Mode of the RHR System instrumentation covered by Items 1 and 2 of Table 3.3.3-3 have associated daily channel checks performed which provide a qualitative assessment of the operability of the instruments. These instruments also have associated monthly channel functional tests which use a simulated signal to verify the operability of the instrumentation. Ongoing performance of these tests throughout the proposed extension period will provide continued confidence that these instruments are capable of performing their intended safety function.

The Loss of Power instrumentation covered by Item 5 of Table 4.3.3-1 has an associated monthly channel functional test performed to verify the operability of the 4160 volt degraded voltage instrumentation. Ongoing performance of this test throughout the extension period will provide continued confidence that the Loss of Power instrumentation is capable of performing its intended safety function.

Over the past five years, there have been no valve or pump failures associated with the diesel generator load testing of the ECCS actuation instrumentation

logic. This demonstrates a high degree of reliability for the actuation instrumentation and its associated equipment.

Based on daily and monthly instrumentation tests performed, the quarterly testing of valve actuation and pump operation, and the historically high degree of reliability of the ECCS actuation instrumentation, extending the due date for surveillance testing required by Technical Specifications 4.3.3.2 and 4.3.3.3 for Items 1 and 2 of Table 3.3.3-3, and Item 5 of Table 4.3.3-1 from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will not involve a significant reduction in the margin of safety.

II. Service Water System - Technical Specification 4.7.1.2.b.

As stated above, the automatic valves which will be tested during performance of Technical Specification 4.7.1.2.b surveillance requirements are the diesel generator 3 and 4 jacket water cooler service water supply valves (2-SW-V212 and 2-SW-V213). The automatic function of these valves is also tested on a monthly basis during the performance of Periodic Tests 12.2c and 12.2d (diesel generator loading tests). During the performance of these loading tests the service water supply valves automatically open upon diesel generator start.

Over the past five years, there have been no valve failures associated with performance of Technical Specification 4.7.1.2.b or the monthly diesel generator loading tests. This demonstrates a high degree of reliability. In the unlikely event that a jacket water cooler service water supply valve were to fail to actuate, automatic actuations take place which will supply service water to diesel generators 3 and 4 from Unit 1.

Based on the above monthly testing of valve actuation as part of diesel generator loading tests, the high degree of reliability demonstrated by the valves over the past five years, and a secondary supply of service water from Unit 1, extending the due date for Technical Specification 4.7.1.2.b from July 29, 1991 until prior to returning Unit 2 to service from the Reload 9 outage, which is currently scheduled to end on November 21, 1991 will not involve a significant reduction in the margin of safety.