ENCLOSURE 5

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 AND 2
NRC DOCKETS 50-325 AND 50-324
OPERATING LICENSES DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENT
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

MARKED-UP TECHNICAL SPECIFICATION PAGES - UNIT 1

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening set point of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.b are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter, until the inoperable vacuum breakers are restored to OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, the provisions of Specificaton 3.0.4 are not applicable and operation may continue provided the surveillance requirements of Specification 4.6.4.1.b are performed on the OPERABLE vacuum breakers, and the surveillance requirements of Specification 4.6.4.1.b,c are performed within 8 hours and at least once per 72 hours thereafter, until the inoperable vacuum breaker is restored to the closed position; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. 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,c are performed within 8 hours and at least once per ~~72 hours~~ 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.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

b ~~a~~. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

c ~~b~~. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

d ~~c~~. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid,

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.~~b~~. c

ADD:

a. At least once per 14 days and within 2 hours after any discharge of steam to the suppression chamber from any source, verify each vacuum breaker is closed as indicated by the position indicating system.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (Continued)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

→ INSERT (Attached)

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may by required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to that air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. The design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down, or during refueling, the drywell may be open and the reactor building then becomes the primary containment.

The 14 day frequency stated in Specification 3.6.4.1, ACTION c and Specification 4.6.4.1 is based on engineering judgement, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operational experience.

ENCLOSURE 6

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 AND 2
NRC DOCKETS 50-325 AND 50-324
OPERATING LICENSES DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENT
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

MARKED-UP TECHNICAL SPECIFICATION PAGES - UNIT 2

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening setpoint of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.b are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter until the inoperable vacuum breakers are restored to OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, 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 on the OPERABLE vacuum breakers and the surveillance requirements of Specification 4.6.4.1.c are performed within 8 hours and at least once per 72 hours thereafter until the inoperable vacuum breaker is restored to the closed position; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. 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.c are performed within 8 hours and at least once per ~~72 hours~~ 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.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

b ~~a~~. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

c ~~b~~. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

d ~~c~~. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid,

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.~~b~~. c

ADD:

a. At least once per 14 days and within 2 hours after any discharge of steam to the suppression chamber from any source, verify each vacuum breaker is closed as indicated by the position indicating system.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (Continued)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

→ INSERT (Attached)

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may be required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to the air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. This design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down or during refueling the drywell may be open and the reactor building then becomes the primary containment.

The 14 day frequency stated in Specification 3.6.4.1, ACTION c and Specification 4.6.4.1 is based on engineering judgement, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operational experience.

ENCLOSURE 7

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 AND 2
NRC DOCKETS 50-325 AND 50-324
OPERATING LICENSES DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENT
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

TYPED TECHNICAL SPECIFICATION PAGES - UNIT 1

CONTAINMENT SYSTEMS

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening setpoint of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.b are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter, until the inoperable vacuum breakers are restored to OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, 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 on the OPERABLE vacuum breakers and the surveillance requirements of Specification 4.6.4.1.c are performed within 8 hours and at least once per 72 hours thereafter until the inoperable vacuum breaker is restored to the closed position; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. 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.c 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.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 14 days and within 2 hours after any discharge of steam to the suppression chamber from any source, verify each vacuum breaker is closed as indicated by the position indicating system.

b. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

c. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

d. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid.

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.c.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (CONTINUED)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion or primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

The 14 day frequency stated in Specification 3.6.4.1, ACTION c and Specification 4.6.4.1 is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operational experience.

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may be required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to the air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. This design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down or during refueling the drywell may be open and the reactor building then becomes the primary containment.

ENCLOSURE 8

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1 AND 2
NRC DOCKETS 50-325 AND 50-324
OPERATING LICENSES DPR-71 AND DPR-62
REQUEST FOR LICENSE AMENDMENT
DRYWELL-SUPPRESSION CHAMBER VACUUM BREAKERS

TYPED TECHNICAL SPECIFICATION PAGES - UNIT 2

3/4.6.4 VACUUM RELIEF

DRYWELL - SUPPRESSION CHAMBER VACUUM BREAKERS

LIMITING CONDITION FOR OPERATION

3.6.4.1 All drywell-suppression chamber vacuum breakers shall be OPERABLE and in the closed position with:

a. The position indicator OPERABLE, and

b. An opening setpoint of less than or equal to 0.5 psid.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, and 3.

ACTION:

a. With no more than 2 drywell-suppression chamber vacuum breakers inoperable for opening but known to be in the closed position, the provisions of Specification 3.0.4 are not applicable and operation may continue until the next COLD SHUTDOWN provided the surveillance requirements of Specification 4.6.4.1.b are performed on the OPERABLE vacuum breakers within 4 hours and at least once per 15 days thereafter until the inoperable vacuum breakers are restored to OPERABLE status; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. With one drywell-suppression chamber vacuum breaker in the open position, as indicated by the position indicating system, 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 on the OPERABLE vacuum breakers and the surveillance requirements of Specification 4.6.4.1.c are performed within 8 hours and at least once per 72 hours thereafter until the inoperable vacuum breaker is restored to the closed position; otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

c. 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.c are performed within 8 hours and at least once per 14 days hours 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.

SURVEILLANCE REQUIREMENTS

4.6.4.1 Each drywell-suppression chamber vacuum breaker shall be demonstrated OPERABLE:

a. At least once per 14 days and within 2 hours after any discharge of steam to the suppression chamber from any source, verify each vacuum breaker is closed as indicated by the position indicating system.

b. At least once per 31 days and after any discharge of steam to the suppression chamber from any source, by exercising each vacuum breaker through one complete cycle and verifying that each vacuum breaker is closed as indicated by the position indication system.

c. Whenever a vacuum breaker is in the open position, as indicated by the position indication system, by conducting a test that verifies that the differential pressure is maintained greater than 1/2 the initial delta P for one hour without N_2 makeup.

d. At least once per 18 months during shutdown by:

1. Verifying the opening setpoint, from the closed position, to be less than or equal to 0.5 psid,

2. Performance of a CHANNEL CALIBRATION that each position indicator indicates the vacuum breaker to be open if the vacuum breaker does not satisfy the delta P test in 4.6.4.1.c.

3/4.6.3 PRIMARY CONTAINMENT ISOLATION VALVES (Continued)

A list of automatic closing primary containment isolation valves and their associated closure times shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The addition and deletion of primary containment isolation valves shall be made in accordance with Section 50.59 of 10 CFR Part 50.

3/4.6.4 VACUUM RELIEF

Vacuum relief breakers are provided to equalize the pressure between the drywell and suppression pool and the suppression pool and reactor building. This system will maintain the structural integrity of the containment under conditions of large differential pressures.

The vacuum breakers between the drywell and the suppression pool must not be inoperable in the open position since this would allow bypassing of the suppression pool in case of an accident. There are an adequate number of valves to provide some redundancy so that operation may continue with no more than 2 vacuum breakers inoperable and secured in the closed position.

The 14 day frequency stated in Specification 3.6.4.1, ACTION c and Specification 4.6.4.1 is based on engineering judgment, is considered adequate in view of other indications of vacuum breaker status available to operations personnel, and has been shown to be acceptable through operational experience.

Each set of vacuum relief valves between the suppression chamber and reactor building provides 100% relief, which may be required in the unlikely event that negative pressures develop in the primary containment.

The Nitrogen Backup System provides backup motive power for these suppression pool-reactor building vacuum breakers on a loss of instrument air. The normal non-interruptible instrument air system for these vacuum breakers is designed as a Seismic Class I system supplied by air compressors powered from the emergency buses. The Nitrogen System serves as a backup to the air system and thus the loss of the Nitrogen System, or portions thereof, does not make the vacuum breakers inoperable. This design allows for the out of service times in Actions b and c. The Nitrogen Backup System is added to the Suppression Pool-Reactor Building Vacuum Breaker specification to satisfy NRC concerns relative to 10 CFR 50.44(c)(3) as addressed in the Brunswick Safety Evaluation Report dated October 30, 1986 concerning Generic Letter 84-09. Pressurization to 1130 psig assures sufficient system capacity to provide 24 hours of operation with design valve actuation and system leakage.

3/4.6.5 SECONDARY CONTAINMENT

Secondary containment is designed to minimize any ground level release of radioactive material which may result from an accident. The reactor building provides secondary containment during normal operation when the drywell is sealed and in service. When the reactor is shut down or during refueling the drywell may be open and the reactor building then becomes the primary containment.