

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 AMENDMENTS
ELECTRICAL PROTECTIVE ASSEMBLIES SURVEILLANCE INTERVAL , PER GL 91-09

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ELECTRICAL POWER SYSTEMS

REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

LIMITING CONDITION FOR OPERATION

3.8.2.5 Two RPS electric power monitoring channels for each inservice RPS MG set or alternate source shall be OPERABLE.

APPLICABILITY: Whenever the respective power supply is supplying power to a RPS bus.

ACTION:

- a. With one RPS electric power monitoring channel for an inservice RPS MG set or alternate power supply inoperable, restore the inoperable channel to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service.
- b. With both RPS electric power monitoring channels for an inservice RPS MG set or alternate power supply inoperable, restore at least one to OPERABLE status within 30 minutes or remove the associated RPS MG set or alternate power supply from service.

SURVEILLANCE REQUIREMENTS

4.8.2.5 The above specified RPS power monitoring system instrumentation shall be determined OPERABLE:

- By performance of a CHANNEL FUNCTIONAL TEST each time the plant is in cold shutdown for a period of more than 24 hours, unless performed in the previous 6 months.*
- a. ~~At least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST,~~ and
 - b. At least once per 18 months by demonstrating the OPERABILITY of over-voltage, under-voltage, and under-frequency protective instrumentation by performance of a CHANNEL CALIBRATION including simulated automatic actuation of the protective relays, tripping logic, and output circuit breakers and verifying the following setpoints:

	<u>RPS MG SET</u>	<u>ALTERNATE SOURCE</u>
1. Over-voltage	≤ 129 VAC	≤ 132 VAC
2. Under-voltage	≥ 105 VAC	≥ 108 VAC
3. Under-frequency	≥ 57 Hz	≥ 57 Hz

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

The OPERABILITY of the A.C. and D. C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for 1) the safe shutdown of the facility and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources is consistent with the initial condition assumptions of the accident analyses and is based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods and 2) sufficient instrumentation and control capability is available for monitoring and maintain the facility status.

The requirement of Specification 4.8.1.1.1.b to demonstrate the operability of the independent circuits between the offsite transmission network and the onsite Class 1E distribution system may be satisfied by transferring unit loads from the unit auxiliary transformer (UAT) to the start-up auxiliary transformer (SAT). The requirement to perform this demonstration "during shutdown" implies that this testing may be performed by the normal power switching evolutions during unit shutdown or while shutdown.

The requirement of Specification 4.8.1.1.2.d to demonstrate the OPERABILITY of each diesel generator at least once per 18 months during shutdown may be satisfied by performing the required surveillances on diesel generators number 1 and 2 while Brunswick Unit 1 is shutdown, and diesel generators number 3 and 4 while Brunswick Unit 2 is shutdown. While performing the required surveillances of a given diesel generator, the loads associated with that diesel generator are subject to the Limiting Condition for Operation requirements for each system or component that obtains its emergency power from that diesel generator.

3/4.8.2.5 REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

The CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow scheduling and proper performance of the surveillance.

The above requirements of the surveillance frequency are based on guidance provided in Generic
BRUNSWICK - UNIT 1 B 3/4 8¹¹ May 10, 1990 Letter

91-09.

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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 AMENDMENTS
ELECTRICAL PROTECTIVE ASSEMBLIES SURVEILLANCE INTERVAL , PER GL 91-09

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ELECTRICAL POWER SYSTEMS

REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

LIMITING CONDITION FOR OPERATION

3.8.2.5 Two RPS electric power monitoring channels for each inservice RPS MG set or alternate source shall be OPERABLE.

APPLICABILITY: Whenever the respective power supply is supplying power to a RPS bus.

ACTION:

- a. With one RPS electric power monitoring channel for an inservice RPS MG set or alternate power supply inoperable, restore the inoperable channel to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service.
- b. With both RPS electric power monitoring channels for an inservice RPS MG set or alternate power supply inoperable, restore at least one to OPERABLE status within 30 minutes or remove the associated RPS MG set or alternate power supply from service.

SURVEILLANCE REQUIREMENTS

4.8.2.5 The above specified RPS power monitoring system instrumentation shall be determined OPERABLE:

- a. ~~At least once per 6 months by performance of a CHANNEL FUNCTIONAL TEST, and~~
By performance of a CHANNEL FUNCTIONAL TEST each time the plant is in COLD SHUTDOWN for a period of more than 24 hours, unless performed in the previous 6 months, and
- b. At least once per 18 months by demonstrating the OPERABILITY of over-voltage, under-voltage, and under-frequency protective instrumentation by performance of a CHANNEL CALIBRATION including simulated automatic actuation of the protective relays, tripping logic, and output circuit breakers and verifying the following setpoints:

	<u>RPS MG SET</u>	<u>ALTERNATE SOURCE</u>
1. Over-voltage	≤ 129 VAC	≤ 132 VAC
2. Under-voltage	≥ 105 VAC	≥ 108 VAC
3. Under-frequency	≥ 57 Hz	≥ 57 Hz

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

The OPERABILITY of the A.C. and D.C. power sources and associated distribution systems during operation ensures that sufficient power will be available to supply the safety-related equipment required for 1) the safe shutdown of the facility, and 2) the mitigation and control of accident conditions within the facility. The minimum specified independent and redundant A.C. and D.C. power sources and distribution systems satisfy the requirements of General Design Criteria 17 of Appendix "A" to 10 CFR 50.

The ACTION requirements specified for the levels of degradation of the power sources provide restriction upon continued facility operation commensurate with the level of degradation. The OPERABILITY of the power sources is consistent with the initial condition assumptions of the accident analyses and is based upon maintaining at least one of each of the onsite A.C. and D.C. power sources and associated distribution systems OPERABLE during accident conditions coincident with an assumed loss of offsite power and single failure of the other onsite A.C. source.

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that 1) the facility can be maintained in the shutdown or refueling condition for extended time periods, and 2) sufficient instrumentation and control capability is available for monitoring and maintaining the facility status.

The requirement of Specification 4.8.1.1.1.b to demonstrate the operability of the independent circuits between the offsite transmission network and the onsite Class 1E distribution system may be satisfied by transferring unit loads from the unit auxiliary transformer (UAT) to the start-up auxiliary transformer (SAT). The requirement to perform this demonstration "during shutdown" implies that this testing may be performed by the normal power switching evolutions during unit shutdown or while shutdown.

3/4.8.2.5 REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

The CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the ^{SNC 10/2/85} RPS RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow scheduling and proper performance of the surveillance.

The above requirements of the surveillance frequency are based on guidance provided in Generic Letter 91-09.

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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 AMENDMENTS
ELECTRICAL PROTECTIVE ASSEMBLIES SURVEILLANCE INTERVAL , PER GL 91-09

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ELECTRICAL POWER SYSTEMS

REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

LIMITING CONDITION FOR OPERATION

3.8.2.5 Two RPS electric power monitoring channels for each inservice RPS MG set or alternate source shall be OPERABLE.

APPLICABILITY: Whenever the respective power supply is supplying power to a RPS bus.

ACTION:

- a. With one RPS electric power monitoring channel for an inservice RPS MG set or alternate power supply inoperable, restore the inoperable channel to OPERABLE status within 72 hours or remove the associated RPS MG set or alternate power supply from service.
- b. With both RPS electric power monitoring channels for an inservice RPS MG set or alternate power supply inoperable, restore at least one to OPERABLE status within 30 minutes or remove the associated RPS MG set or alternate power supply from service.

SURVEILLANCE REQUIREMENTS

4.8.2.5 The above specified RPS power monitoring system instrumentation shall be determined OPERABLE:

- a. By performance of a CHANNEL FUNCTIONAL TEST each time the plant is in COLD SHUTDOWN for a period of more than 24 hours, unless performed in the previous 6 months, and
- b. At least once per 18 months by demonstrating the OPERABILITY of over-voltage, under-voltage, and under-frequency protective instrumentation by performance of a CHANNEL CALIBRATION including simulated automatic actuation of the protective relays, tripping logic, and output circuit breakers and verifying the following setpoints:

	<u>RPS MG SET</u>	<u>ALTERNATE SOURCE</u>
1. Over-voltage	≤ 129 VAC	≤ 132 VAC
2. Under-voltage	≥ 105 VAC	≥ 108 VAC
3. Under-frequency	≥ 57 Hz	≥ 57 Hz

3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.2.5 REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

The CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow scheduling and proper performance of the surveillance.

The above requirements of the surveillance frequency are based on guidance provided in Generic Letter 91-09.

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 AMENDMENTS
ELECTRICAL PROTECTIVE ASSEMBLIES SURVEILLANCE INTERVAL , PER GL 91-09

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ELECTRICAL POWER SYSTEMS

REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

LIMITING CONDITION FOR OPERATION

3.8.2.5 Two RPS electric power monitoring channels for each inservice RPS MG set or alternate source shall be OPERABLE.

APPLICABILITY: Whenever the respective power supply is supplying power to a RPS bus.

ACTION:

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SURVEILLANCE REQUIREMENTS

4.8.2.5 The above specified RPS power monitoring system instrumentation shall be determined OPERABLE:

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3/4.8 ELECTRICAL POWER SYSTEMS

BASES

3/4.8.2.5 REACTOR PROTECTION SYSTEM ELECTRIC POWER MONITORING

The CHANNEL FUNCTIONAL TEST is only required to be performed while the plant is in a condition in which the loss of the RPS bus will not jeopardize steady state power operation (the design of the system is such that the power source must be removed from service to conduct the surveillance). The 24 hours is intended to indicate an outage of sufficient duration to allow scheduling and proper performance of the surveillance.

The above requirements of the surveillance frequency are based on guidance provided in Generic Letter 91-09.