ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 1

PROPOSED TECHNICAL SPECIFICATION CHANGES

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION
INSTRUMENTATION AND MAIN TURBINE TRIP SYSTEM

REFERENCE NO. 83TSB31

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LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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BASES

STAGGERED TEST BASIS

A STAGGERED TEST BASIS shall consist of:

a. A test schedule for n systems, subsystems, trains or other designated components obtained by dividing the specified test interval into n equal subintervals.

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TOTAL PEAKING FACTOR

The TOTAL PEAKING FACTOR (TPF) shall be the ratio of local LHGR for any specific location on a fuel rod divided by the average LHGR associated with the fuel bundles of the same type operating at the core average bundle power.

TURBINE BYPASS SYSTEM RESPONSE TIME

The TURBINE BYPASS SYSTEM RESPONSE TIME shall be that time interval from when the turbine bypass control unit generates a turbine bypass valve flow signal until the turbine bypass valves travel to their required positions. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

UNIDENTIFIED LEAKAGE

UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE.

INSTRUMENTATION

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels requirement, restore the inoperable channel to OPERABLE status within 7 days or be in at least STARTUP within the next 8 hours.

c. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels requirement, restore at least one of the inoperable channels to OPERABLE status within 72 hours or be in at least STARTUP within the next 8 hours.

SURVEILLANCE REQUIREMENTS

4.3.8.1 Each feedwater/main turbine trip system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.8.1-1.

4.3.8.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBERS	MINIMUM OPERABLE CHANNELS
1. Reactor Vessel Water Level - High (C32-LT-N004A,B,C; C32-K600A,B,C; C32-LA-K624A,B,C)	3

TABLE 3.3.8-2

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SETPOINTS

TRIP FUNCTION AND INSTRUMENT NUMBERS	TRIP SETPOINT	ALLOWABLE VALUE
1. Reactor Vessel Water Level - High (C32-LT-N004A,B,C; C32-K600A,B,C; C32-LA-K624A,B,C)	$\leq$ 208 inches*	$\leq$ 209.5 inches*

* Vessel water levels refer to REFERENCE LEVEL ZERO.

TABLE 4.3.8.1-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION SURVEILLANCE REQUIREMENTS

TRIP FUNCTION AND INSTRUMENT NUMBER	CHANNEL CHECK	CHANNEL FUNCTIONAL TEST	CHANNEL CALIBRATION
1. Reactor Vessel Water Level - High (C32-LT-N004A,B,C; C32-K600A,B,C; C32-LA-K624A,B,C)	D	Q	R

PLANT SYSTEMS

3/4.7.9 MAIN TURBINE BYPASS SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 The main turbine bypass system shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

With the main turbine bypass system inoperable, restore the system to OPERABLE status within 12 hours or:

a. Determine MCPR to be equal to or greater than the applicable MCPR limit without bypass within the next hour, or

b. Restore MCPR to within the applicable MCPR limit without bypass within the next 4 hours or reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the following 4 hours.

SURVEILLANCE REQUIREMENTS

4.7.9 The main turbine bypass system shall be demonstrated OPERABLE at least once per:

a. 7 days by cycling each turbine bypass valve through at least one complete cycle of full travel, and

b. 18 months by:

1. Performing a system functional test which includes simulated automatic actuation and verifying that each automatic valve actuates to its correct position.

2. Demonstrating TURBINE BYPASS SYSTEM RESPONSE TIME to be less than or equal to 300 milliseconds to a valve position equivalent to 80% of the total main turbine bypass system rated flow.

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

The feedwater/main turbine trip system is utilized to terminate a transient initiated by a feedwater controller failure resulting in a maximum feedwater demand. During this event, the resulting influx of excess feedwater flow results in an increase in core subcooling, which reduces the void fraction and thus induces an increase in reactor power. The excess feedwater flow also increases reactor water level, which eventually leads to a main turbine trip and feedwater turbine trip as a result of the high water level. The main turbine stop valve position switches actuate a reactor scram trip and the main turbine bypass system (refer to Bases 3/4.7.9) which limits the neutron flux peak and fuel thermal transient such that the Minimum Critical Power Ratio remains above the Safety Limit.

3/4.7.9 MAIN TURBINE BYPASS SYSTEM

The main turbine bypass system is required to be OPERABLE consisent with the assumptions of the feedwater controller failure analysis for FSAR Chapter 15. Following closure of the main turbine stop valves initiated by the feedwater/main turbine trip system actuation instrumentation, the main turbine bypass system actuates to the limit the pressure increase so that no excessive overpressurization of the nuclear system process barrier occurs. (For Unit 1, which has a much smaller turbine bypass system capacity that Unit 2, the relief valves open briefly as steam line pressures reach the relief valve setpoints.) The turbine bypass valves subsequently close to control the pressure in the vessel during reactor shutdown.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NO. 2

PROPOSED TECHNICAL SPECIFICATION CHANGES

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION
INSTRUMENTATION AND MAIN TURBINE TRIP SYSTEM

REFERENCE NO. 83TSB31

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STAGGERED TEST BASIS (Continued)

b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

THERMAL POWER

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

TOTAL PEAKING FACTOR

The TOTAL PEAKING FACTOR (TPF) shall be the ratio of local LHGR for any specific location on a fuel rod divided by the average LHGR associated with the fuel bundles of the same type operating at the core average bundle power.

TURBINE BYPASS SYSTEM RESPONSE TIME

The TURBINE BYPASS SYSTEM RESPONSE TIME shall be that time interval from when the turbine bypass control unit generates a turbine bypass valve flow signal until the turbine bypass valves travel to their required positions. The response time may be measured by any series of sequential, overlapping or total steps such that the entire response time is measured.

UNIDENTIFIED LEAKAGE

UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE.

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.8 The feedwater/main turbine trip system actuation instrumentation channels shown in Table 3.3.8-1 shall be OPERABLE with their trip setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3.8-2.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

a. With a feedwater/main turbine trip system actuation instrumentation channel trip setpoint less conservative than the value shown in the Allowable Values column of Table 3.3.8-2, declare the channel inoperable until the channel is restored to OPERABLE status with its trip setpoint adjusted consistent with the Trip Setpoint value.

b. With the number of OPERABLE channels one less than required by the Minimum OPERABLE Channels requirement, restore the inoperable channel to OPERABLE status within 7 days or be in at least STARTUP within the next 8 hours.

c. With the number of OPERABLE channels two less than required by the Minimum OPERABLE Channels requirement, restore at least one of the inoperable channels to OPERABLE status within 72 hours or be in at least STARTUP within the next 8 hours.

SURVEILLANCE REQUIREMENTS

4.3.8.1 Each feedwater/main turbine trip system actuation instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL FUNCTIONAL TEST and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3.8.1-1.

4.3.8.2 LOGIC SYSTEM FUNCTIONAL TESTS and simulated automatic operation of all channels shall be performed at least once per 18 months.

TABLE 3.3.8-1

FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

TRIP FUNCTION AND INSTRUMENT NUMBERS	MINIMUM OPERABLE CHANNELS
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1. Reactor Vessel Water Level - High (C32-LT-N004A,B,C; C32-K600A,B,C; C32-LA-K624A,B,C)	D	Q	R

3/4.7.9 MAIN TURBINE BYPASS SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.9 The main turbine bypass system shall be OPERABLE.

APPLICABILITY: OPERATIONAL CONDITION 1.

ACTION:

With the main turbine bypass system inoperable, restore the system to OPERABLE status within 12 hours or:

a. Determine MCPR to be equal to or greater than the applicable MCPR limit without bypass within the next hour, or

b. Restore MCPR to within the applicable MCPR limit without bypass within the next 4 hours or reduce THERMAL POWER to less than 25% of RATED THERMAL POWER within the following 4 hours.

SURVEILLANCE REQUIREMENTS

4.7.9 The main turbine bypass system shall be demonstrated OPERABLE at least once per:

a. 7 days by cycling each turbine bypass valve through at least one complete cycle of full travel, and

b. 18 months by:

1. Performing a system functional test which includes simulated automatic actuation and verifying that each automatic valve actuates to its correct position.

2. Demonstrating TURBINE BYPASS SYSTEM RESPONSE TIME to be less than or equal to 300 milliseconds to a valve position equivalent to 80% of the total main turbine bypass system rated flow.

3/4.3.8 FEEDWATER/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION

The feedwater/main turbine trip system is utilized to terminate a transient initiated by a feedwater controller failure resulting in a maximum feedwater demand. During this event, the resulting influx of excess feedwater flow results in an increase in core subcooling, which reduces the void fraction and thus induces an increase in reactor power. The excess feedwater flow also increases reactor water level, which eventually leads to a main turbine trip and feedwater turbine trip as a result of the high water level. The main turbine stop valve position switches actuate a reactor scram trip and the main turbine bypass system (refer to Bases 3/4.7.9) which limits the neutron flux peak and fuel thermal transient such that the Minimum Critical Power Ratio remains above the Safety Limit.

3/4.7.9 MAIN TURBINE BYPASS SYSTEM

The main turbine bypass system is required to be OPERABLE consisent with the assumptions of the feedwater controller failure analysis for FSAR Chapter 15. Following closure of the main turbine stop valves initiated by the feedwater/main turbine trip system actuation instrumentation, the main turbine bypass system actuates to the limit the pressure increase so that no excessive overpressurization of the nuclear system process barrier occurs. (For Unit 1, which has a much smaller turbine bypass system capacity that Unit 2, the relief valves open briefly as steam line pressures reach the relief valve setpoints.) The turbine bypass valves subsequently close to control the pressure in the vessel during reactor shutdown.