ATTACHMENT (1)

UNIT 1

TECHNICAL SPECIFICATION

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BASES 3/4 1-3

3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.2 BORATION SYSTEMS

Borated Water Sources - Shutdown

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be **OPERABLE**:

a. One boric acid storage tank and one associated heat tracing circuit with the tank contents in accordance with Figure 3.1.2-1.

b. The refueling water tank with:

1. A minimum contained borated water volume of 9,844 gallons,

~~2. A minimum boron concentration of 2300 ppm, and~~

2. A minimum solution temperature of 35°F, and INSERT A

APPLICABILITY: MODES 5 and 6.

ACTION: With no borated water sources **OPERABLE**, suspend all operations involving **CORE ALTERATIONS** or positive reactivity changes until at least one borated water source is restored to **OPERABLE** status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated **OPERABLE**:

a. At least once per 7 days by:

1. Verifying the boron concentration of the water,

2. Verifying the contained borated water volume of the tank, and

3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWT temperature when it is the source of borated water and the outside air temperature is < 35°F.

INSERT A

3. A minimum boron concentration of :

   a. 2300 ppm in **MODE** 5 , and

   b. the boron concentration limit of Technical Specification 3.9.1 in **MODE** 6.

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head unbolted or removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling pool shall be maintained within the limit provided in the COLR.

APPLICABILITY: MODE 6.

ACTION: With the requirements of the above specification not satisfied, immediately suspend all operations involving **CORE ALTERATIONS** or positive reactivity changes and ~~initiate and continue boration at ≥ 40 gpm of 2300 ppm boric acid solution or its equivalent until the boron concentration is within its limit.~~ The provisions of Specification 3.0.3 are not applicable. initiate actions to restore boron concentration to within its limit.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The boron concentration shall be determined to be within its limit prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length CEA in excess of 3 feet from its fully inserted position.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling pool shall be determined by chemical analysis at least 3 times per 7 days with a maximum time interval between samples of 72 hours.

With the RCS average temperature above 200°F, a minimum of two independent and redundant boration systems are provided to ensure single functional capability in the event an assumed failure renders one of the systems inoperable. Allowable out-of-service periods ensure that minor component repair or corrective action may be completed without undue risk to overall facility safety from injection system failures during the repair period.

The boration capability of either system will provide sufficient **SHUTDOWN MARGIN** from all operating conditions assuming xenon decay and cooldown to 200°F. The maximum boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires boric acid solution from the boric acid tanks, the concentration and volume of which are met by the range of values given in Specifications 3.1.2.8 and 3.1.2.9, or 55,627 gallons of 2300 ppm borated water from the refueling water tank. However, to be consistent with the ECCS requirements, the RWT is required to have a minimum contained volume of 400,000 gallons during **MODES** 1, 2, 3 and 4. The maximum boron concentration of the refueling water tank shall be limited to 2700 ppm and the maximum boron concentration of the boric acid storage tanks shall be limited to 6% to preclude the possibility of boron precipitation in the core during long term ECCS cooling.

With the RCS temperature below 200°F, one boration system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting **CORE ALTERATIONS** and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing sufficient **SHUTDOWN MARGIN** after xenon decay and cooldown from 200°F to 140°F. This condition requires either boric acid solution from the boric acid tanks, the requirements of which are met by Specification 3.1.2.7, or 9,844 gallons of 2300 ppm borated water from the refueling water tank.

The **OPERABILITY** of one boration system ~~during **REFUELING**~~ in MODE 6 ensures that this system is available for reactivity control ~~while in **MODE 6**~~ as required by ACTION 3.9.2.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum **SHUTDOWN MARGIN** is maintained, and (3) the potential effects of a CEA ejection accident are limited to acceptable levels.

The **ACTION** statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original criteria are met. A regulating or shutdown CEA is considered to be misaligned if it is more than 7.5 inches from any other CEA in its group, however, a shutdown CEA is alsc considered to be misaligned if it is

ATTACHMENT (2)

UNIT 2

TECHNICAL SPECIFICATION

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3/4 1-17

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BASES 3/4 1-3

3/4.1 **REACTIVITY CONTROL SYSTEMS**

3/4.1.2 BORATION SYSTEMS

Borated Water Sources - Shutdown

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be **OPERABLE**:

a. One boric acid storage tank and one associated heat tracing circuit with the tank contents in accordance with Figure 3.1.2-1.

b. The refueling water tank with:

1. A minimum contained borated water volume of 9,844 gallons,

~~2. A minimum boron concentration of 2300 ppm, and~~

2.~~3.~~ A minimum solution temperature of 35°F, and

INSERT A

APPLICABILITY: **MODES** 5 and 6.

ACTION: With no borated water sources **OPERABLE**, suspend all operations involving **CORE ALTERATIONS** or positive reactivity changes until at least one borated water source is restored to **OPERABLE** status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated **OPERABLE**:

a. At least once per 7 days by:

1. Verifying the boron concentration of the water,

2. Verifying the contained borated water volume of the tank, and

3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWT temperature when it is the source of borated water and the outside air temperature is < 35°F.

INSERT A

3. A minimum boron concentration of :

   a. 2300 ppm in **MODE** 5 , and

   b. the boron concentration limit of Technical Specification 3.9.1 in **MODE** 6.

3/4.9 REFUELING OPERATIONS

3/4.9.1 BORON CONCENTRATION

LIMITING CONDITION FOR OPERATION

3.9.1 With the reactor vessel head unbolted or removed, the boron concentration of all filled portions of the Reactor Coolant System and the refueling pool shall be maintained within the limit provided in the COLR.

APPLICABILITY: MODE 6.

ACTION: With the requirements of the above specification not satisfied, immediately suspend all operations involving **CORE ALTERATIONS** or positive reactivity changes and ~~initiate and continue boration at ≥ 40 gpm of 2300 ppm boric acid solution or its equivalent until the boron concentration is within its limit.~~ The provisions of Specification 3.0.3 are not applicable.

initiate actions to restore boron concentration to within its limit.

SURVEILLANCE REQUIREMENTS

4.9.1.1 The boron concentration shall be determined to be within its limit prior to:

a. Removing or unbolting the reactor vessel head, and

b. Withdrawal of any full length CEA in excess of 3 feet from its fully inserted position.

4.9.1.2 The boron concentration of the Reactor Coolant System and the refueling pool shall be determined by chemical analysis at least 3 times per 7 days with a maximum time interval between samples of 72 hours.

BASES

The components required to perform this function include: 1) borated water sources, 2) charging pumps, 3) separate flow paths, 4) boric acid pumps, 5) associated heat tracing systems, and 6) an emergency power supply from **OPERABLE** diesel generators. At or below 80% of **RATED THERMAL POWER**, there is a corresponding decrease in decay heat which compensates for the loss of injection from one charging pump assumed in the Small Break LOCA Analyses.

With the RCS average temperature above 200°F, a minimum of two independent and redundant boration systems are provided to ensure single functional capability in the event an assumed failure renders one of the systems inoperable. Allowable out-of-service periods ensure that minor component repair or corrective action may be completed without undue risk to overall facility safety from injection system failures during the repair period.

The boration capability of either system will provide sufficient **SHUTDOWN MARGIN** from all operating conditions assuming xenon decay and cooldown to 200°F. The maximum boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires boric acid solution from the boric acid tanks, the concentration and volume of which are met by the range of values given in Specifications 3.1.2.8 and 3.1.2.9, or 55,627 gallons of 2300 ppm borated water from the refueling water tank. However, to be consistent with the ECCS requirements, the RWT is required to have a minimum contained volume of 400,000 gallons during **MODES** 1, 2, 3 and 4. The maximum boron concentration of the refueling water tank shall be limited to 2700 ppm and the maximum boron concentration of the boric acid storage tanks shall be limited to 8% to preclude the possibility of boron precipitation in the core during long term ECCS cooling.

With the RCS temperature below 200°F, one boration system is acceptable without single failure consideration on the basis of the stable reactivity condition of the reactor and the additional restrictions prohibiting **CORE ALTERATIONS** and positive reactivity change in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing sufficient **SHUTDOWN MARGIN** after xenon decay and cooldown from 200°F to 140°F. This condition requires either boric acid solution from the boric acid tanks, the requirements of which are met by Specification 3.1.2.7, or 9,844 gallons of 2300 ppm borated water from the refueling water tank.

The **OPERABILITY** of one boration system ~~during **REFUELING**~~ in MODE 6 ensures that this system is available for reactivity control ~~while in **MODE 6.**~~ as required by ACTION 3.9.1.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES

The specifications of this section ensure that (1) acceptable power distribution limits are maintained, (2) the minimum **SHUTDOWN MARGIN** is maintained, and (3) the potential effects of a CEA ejection accident are limited to acceptable levels.