

Attachment B

MARKED-UP TECHNICAL SPECIFICATIONS

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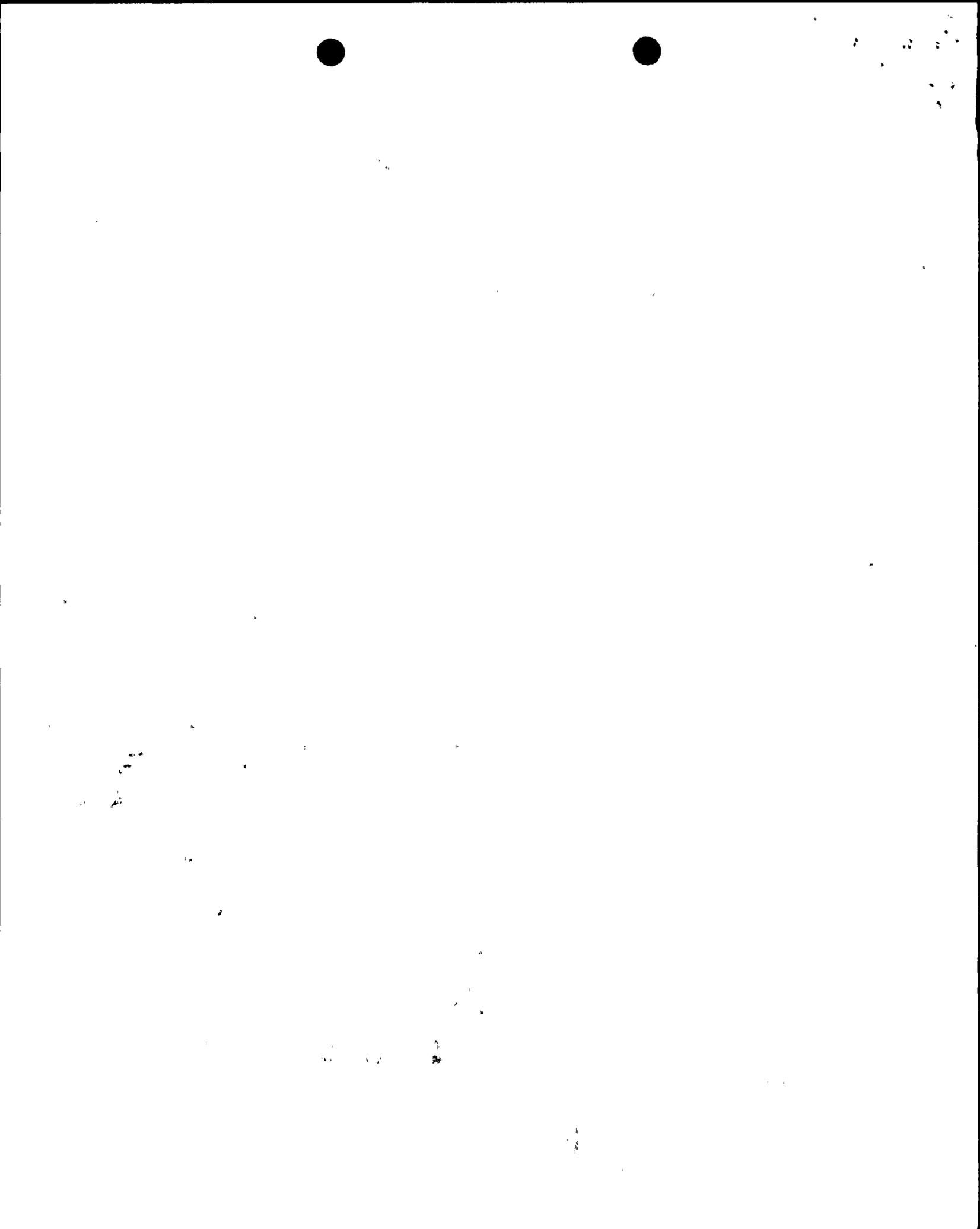


TABLE 3.3-5 (Continued)

TABLE NOTATIONS

- (1) Diesel generator starting delay not included because offsite power available.
- (2) Feedwater System overall response time shall include verification of each individual Feedwater System valve closure time as shown below:

| <u>Valve</u> | <u>Closure Time (not including instrumentation delays)</u> |
|--------------|--|
| FCV-438 | < 60 seconds |
| 439 | < 60 seconds |
| 440 | < 60 seconds |
| 441 | < 60 seconds |
| 510 | < 5 seconds |
| 520 | < 5 seconds |
| 530 | < 5 seconds |
| 540 | < 5 seconds |
| 1510 | < 5 seconds |
| 1520 | < 5 seconds |
| 1530 | < 5 seconds |
| 1540 | < 5 seconds |

- (3) Diesel generator starting and loading delays included.
- (4) Diesel generator starting delay not included because offsite power is available. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps (where applicable). Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.

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- (5) Diesel generator starting and sequence loading delays included. Offsite power is not available. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps. Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is included.

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- (6) The maximum response time of 48.5 seconds is the time from when the containment pressure exceeds the High-High Setpoint until the spray pump is started and the discharge valve travels to the fully open position assuming off-site power is not available. The time of 48.5 seconds includes the 28-second maximum delay related to ESF loading sequence. Spray riser piping fill time is not included. The 80-second maximum spray delay time does not include the time from LOCA start to "P" signal.
- (7) Diesel generator starting and sequence loading delays included. Sequential transfer of charging pump suction from the VCT to the RWST (RWST valves open, then VCT valves close) is not included. Response time limit includes opening of valves to establish SI flow path and attainment of discharge pressure for centrifugal charging pumps, SI, and RHR pumps (where applicable).



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For Units 1 and 2 Cycle 4, the Safety Injection response time limit shall be as follows:

| | |
|---|------|
| Pressurizer Pressure-Low | ≤ 12 |
| Differential Pressure Between Steam Lines-High | ≤ 13 |
| Steam Flow in Two Steam Lines-High Coincident with T _{avg} -Low-Low | ≤ 15 |
| Steam Flow in Two Steam Lines-High Coincident with Steam Line Pressure-Low | ≤ 13 |

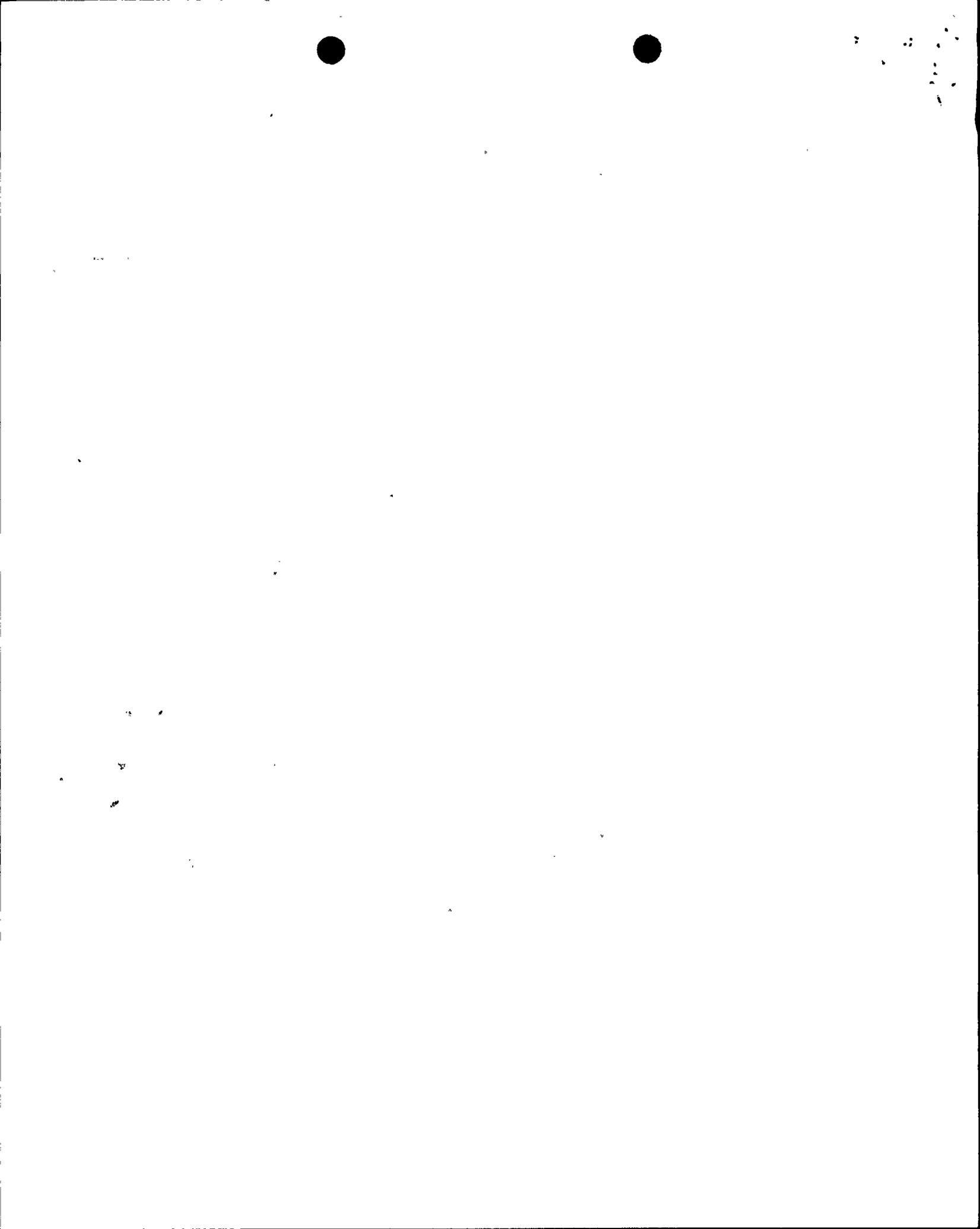
Diesel generator starting delay not included because offsite power is available. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps (where applicable).

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For Units 1 and 2 Cycle 4, the Safety Injection response time limit shall be as follows:

| | |
|---|------|
| Differential Pressure Between Steam Lines-High | ≤ 23 |
| Steam Flow in Two Steam Lines-High Coincident with T _{avg} -Low-Low | ≤ 25 |
| Steam Flow in Two Steam Lines-High Coincident with Steam Line Pressure-Low | ≤ 23 |

Diesel generator starting and sequence loading delays included. Response time limit includes opening of valves to establish SI path and attainment of discharge pressure for centrifugal charging pumps (where applicable).



EMERGENCY CORE COOLING SYSTEMS

3/4.5.4 BORON INJECTION SYSTEM

BORON INJECTION TANK

LIMITING CONDITION FOR OPERATION

3.5.4.1 The boron injection tank shall be OPERABLE with:

- a. A minimum contained borated water volume of 900 gallons of borated water,
- b. A boron concentration of between 20,000 and 22,500 ppm, and
- c. A minimum solution temperature of 145°F.

APPLICABILITY: MODES 1, 2 and 3. For Unit^s 1, ^{and 2} Cycle 4, ~~Unit 2 Cycle 3.~~

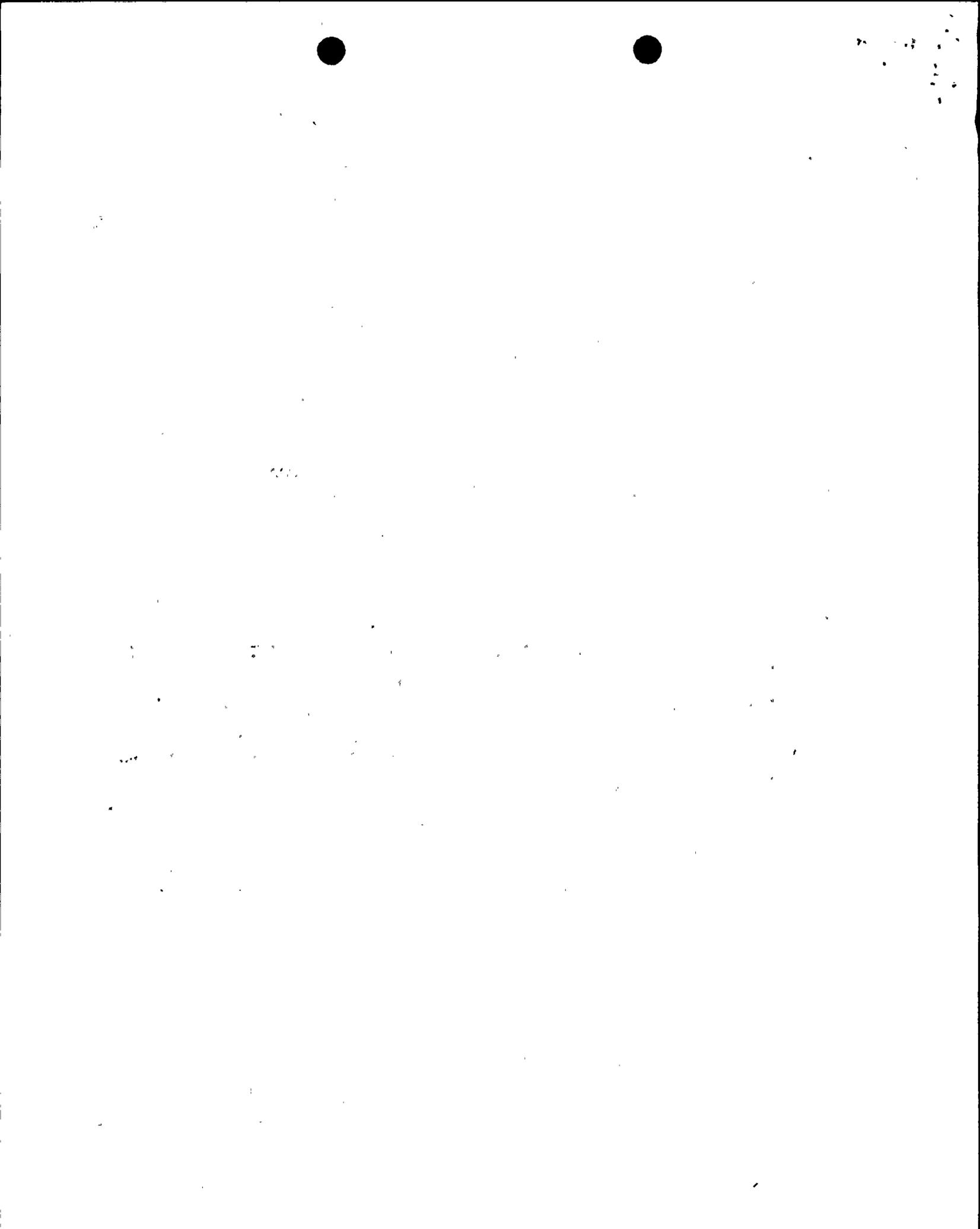
ACTION:

With the boron injection tank inoperable, restore the tank to OPERABLE status within 1 hour or be in HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to 1% $\Delta k/k$ at 200°F within the next 6 hours; restore the tank to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 12 hours.

SURVEILLANCE REQUIREMENTS

4.5.4.1 The boron injection tank shall be demonstrated OPERABLE by:

- a. Verifying the contained borated water volume through a recirculation flow test at least once per 7 days,
- b. Verifying the boron concentration of the water in the tank at least once per 7 days, and
- c. Verifying the water temperature at least once per 24 hours.



EMERGENCY CORE COOLING SYSTEMS

HEAT TRACING

LIMITING CONDITION FOR OPERATION

3.5.4.2 At least two independent channels of heat tracing shall be OPERABLE for the boron injection tank and for the heat traced portions of the associated flow paths.

APPLICABILITY: MODES 1, 2 and 3. For Unit^s 1 ^{and 2} Cycle 4, ~~Unit 2 Cycle 3.~~

ACTION:

With only one channel of heat tracing on either the boron injection tank or on the heat traced portion of an associated flow path OPERABLE, operation may continue for up to 30 days provided the tank and flow path temperatures are verified to be greater than or equal to 145°F at least once per 8 hours; otherwise, be in HOT STANDBY within 6 hours and in at least HOT SHUTDOWN within the following 6 hours.

SURVEILLANCE REQUIREMENTS

4.5.4.2 Each heat tracing channel for the boron injection tank and associated flow path shall be demonstrated OPERABLE:

- a. At least once per 31 days by energizing each heat tracing channel, and
- b. At least once per 24 hours by verifying the tank and flow path temperatures to be greater than or equal to 145°F. The tank temperature shall be determined by measurement. The flow path temperature shall be determined by either measurement or recirculation flow until establishment of equilibrium temperatures within the tank.



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EMERGENCY CORE COOLING SYSTEMS

BASES

ECCS SUBSYSTEMS (Continued)

The requirement to maintain the RHR Suction Valves 8701 and 8702 in the locked closed condition in MODES 1, 2 and 3 provides assurance that a fire could not cause inadvertent opening of these valves when the RCS is pressurized to near operating pressure. These valves are not part of an ECCS subsystem.

The limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all centrifugal charging pumps and Safety Injection pumps except the required OPERABLE charging pump to be inoperable below 323°F provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

The Surveillance Requirements provided to ensure OPERABILITY of each component ensures that, at a minimum, the assumptions used in the safety analyses are met and that subsystem OPERABILITY is maintained. Surveillance requirements for throttle valve position stops and flow balance testing provide assurance that proper ECCS flows will be maintained in the event of a LOCA. Maintenance of proper flow resistance and pressure drop in the piping system to each injection point is necessary to: (1) prevent total pump flow from exceeding runout conditions when the system is in its minimum resistance configuration, (2) provide the proper flow split between injection points in accordance with the assumptions used in the ECCS-LOCA analyses, and (3) provide an acceptable level of total ECCS flow to all injection points equal to or above that assumed in the ECCS-LOCA analyses.

3/4.5.4 BORON INJECTION SYSTEM

The Boron Injection System is only required for Unit 1, ^{5 and 2} Cycle 4, and Unit 2. ~~Unit 2~~ The OPERABILITY of the Boron Injection System as part of the ECCS ensures that sufficient negative reactivity is injected into the core to counteract any positive increase in reactivity caused by RCS cooldown. RCS cooldown can be caused by inadvertent depressurization, a loss-of-coolant accident or a steam line rupture.

The limits on injection tank minimum contained volume and boron concentration ensure that the assumptions used in the steam line break analysis are met. The contained water volume limit includes an allowance for water not usable because of tank discharge line location or other physical characteristics.

The OPERABILITY of the redundant heat tracing channels associated with the boron injection system ensure that the solubility of the boron solution will be maintained above the solubility limit of 135°F at 21,000 ppm boron.

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