

### 3/4.5 EMERGENCY CORE COOLING SYSTEMS (ECCS)

#### SAFETY INJECTION TANKS

##### LIMITING CONDITION FOR OPERATION

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3.5.1 Each reactor coolant system safety injection tank shall be OPERABLE with:

- a. The isolation valve open,
- b. A contained borated water volume of between 1113 and 1179 cubic feet of borated water (equivalent to tank levels of between 187 and 199 inches, respectively),
- c. A boron concentration of between 1720 and 2200 ppm, and
- d. A nitrogen cover-pressure of between 200 ± 25 psig.

APPLICABILITY: MODES 1, 2 and 3.\*

##### ACTION:

- a. With one safety injection tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.
- b. With one safety injection tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

##### SURVEILLANCE REQUIREMENTS

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4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
  1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and
  2. Verifying that each safety injection tank isolation valve is open.

\*With pressurizer pressure  $\geq$  1750 psia.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 31 days by verifying the boron concentration of the safety injection tank solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is removed by maintaining the feeder breaker open under administrative control.
- d. Within 4 hours prior to increasing the RCS pressure above 1750 psia by verifying, via local indication at the valve, that the tank isolation valve is open.
- e. At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:
  - 1. When the RCS pressure exceeds 300 psia, and
  - 2. Upon receipt of a safety injection test signal.
- f. Within one hour prior to each increase in solution volume of  $\geq 1\%$  of normal tank volume by verifying the boron concentration at the operating high pressure safety injection pump discharge is between 1720 and 2200 ppm.

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- a. The isolation valve open,
- b. A contained borated water volume of between 1113 and 1179 cubic feet of borated water (equivalent to tank levels of between 187 and 199 inches, respectively),
- c. A boron concentration of between 1720 and 2200 ppm, and
- d. A nitrogen cover-pressure of between 200 and 250 psig.

APPLICABILITY: MODES 1, 2 and 3.\*

##### ACTION:

- a. With one safety injection tank inoperable, except as a result of a closed isolation valve, restore the inoperable tank to OPERABLE status within one hour or be in HOT SHUTDOWN within the next 12 hours.
- b. With one safety injection tank inoperable due to the isolation valve being closed, either immediately open the isolation valve or be in HOT STANDBY within one hour and be in HOT SHUTDOWN within the next 12 hours.

##### SURVEILLANCE REQUIREMENTS

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4.5.1 Each safety injection tank shall be demonstrated OPERABLE:

- a. At least once per 12 hours by:
  1. Verifying the contained borated water volume and nitrogen cover-pressure in the tanks, and
  2. Verifying that each safety injection tank isolation valve is open.

\*With pressurizer pressure  $\geq$  1750 psia.

## EMERGENCY CORE COOLING SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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- b. At least once per 31 days by verifying the boron concentration of the safety injection tank solution.
- c. At least once per 31 days when the RCS pressure is above 2000 psig, by verifying that power to the isolation valve operator is removed by maintaining the feeder breaker open under administrative control.
- d. Within 4 hours prior to increasing the RCS pressure above 1750 psia by verifying, via local indication at the valve, that the tank isolation valve is open.
- e. At least once per 18 months by verifying that each safety injection tank isolation valve opens automatically under each of the following conditions:
  - 1. When the RCS pressure exceeds 300 psia, and
  - 2. Upon receipt of a safety injection test signal.
- f. Within one hour prior to each increase in solution volume of  $\geq 1\%$  of normal tank volume by verifying the boron concentration at the operating high pressure safety injection pump discharge is between 1720 and 2200 ppm.