

### 3.2 Chemical and Volume Control System

#### Applicability

Applies to the operational status of the chemical and volume control system.

#### Objective

To define those conditions of the chemical and volume control system necessary to assure safe reactor operation.

#### Specification

- 3.2.1 When fuel is in the reactor there shall be at least one flow path to the core for boric acid injection. The minimum capability for boric acid injection shall be equivalent to that supplied from the refueling water storage tank.
- 3.2.2 The reactor shall not be taken above cold shutdown unless the following Chemical and Volume Control System conditions are met.
- a. At least two charging pumps shall be operable.
  - b. Both boric acid transfer pumps shall be operable.
  - c. The boric acid tanks together shall contain a minimum of 2000 gallons of a 12% to 13% by weight boric acid solution at a temperature of at least 145°F (See also Specification 3.3.1.1.j).

j. At or above a reactor coolant system pressure and temperature of 1600 psig and 350°F, except during performance of RCS hydro test, the boric acid tanks together shall contain a minimum of 3110 gallons of boric acid above the setpoint for switchover to the RWST. This solution shall be 12% to 13% by weight boric acid at a temperature of at least 145°F. Below 1600 psig or 350°F the requirements of Specification 3.2.2 apply.



- b. One residual heat removal heat exchanger may be out of service for a period of no more than 72 hours.
- c. Any valve, interlock, or piping required for the functioning of one safety injection train and/or one low heat safety injection train (RHR) may be inoperable provided repairs are completed within 72 hours (except as specified in e. below).
- d. Power may be restored to any valve referenced in 3.3.1.1.g for the purposes of valve testing provided no more than one such valve has power restored and provided testing is completed and power removed within 12 hours.
- e. Those check valves specified in 3.3.1.1.h may be inoperable (greater than 5.0 gpm leakage) provided the inline MOVs are de-energized closed and repairs are completed within 12 hours.

3.3.1.6 The requirements of 3.3.1.1.j may be modified to allow one boric acid tank to be out of service provided a minimum of 3110 gallons of boric acid above the setpoint for switchover to the RWST is contained in the operable tank. This solution shall be 12% to 13% by weight boric acid at a temperature of at least 145°F. If the modified requirement cannot be met within one hour, be in hot shutdown and borated to a shutdown margin equivalent to 1% delta k/k at 200°F within the next 6 hours.

3.3.1.7 Except during diesel generator load and safeguard sequence testing or when the vessel head is removed, or the steam generator primary system manway is open, no more than one safety injection pump shall be operable whenever the overpressure protection system is required to be operable.

3.3.1.7.1 Whenever only one safety injection pump may be operable by 3.3.1.7, at least two of the three safety injection pumps shall be demonstrated inoperable a minimum of once per twelve hours by verifying that the control switches are in the pull-stop position.

a single PORV.

The limitation on boric acid storage tank volume is based on the assumption that 2000 gallons of 12% to 13% solution is delivered to the RCS during a large steam line break associated with the containment integrity analysis.<sup>(10)</sup> The 3110 gallons specified is sufficient to accommodate the losses associated with the recirculation flow to the RWST and the sweep volume in the SI pump suction line and still deliver 2000 gallons to the RCS.

#### References

- (1) Deleted
- (2) UFSAR Section 6.3.3.1
- (3) UFSAR Section 6.2.2.1
- (4) UFSAR Section 15.6.4.3
- (5) UFSAR Section 9.2.2.4
- (6) UFSAR Section 9.2.2.4
- (7) Deleted
- (8) UFSAR Section 9.2.1.2
- (9) UFSAR Section 6.2.1.1 (Containment Integrity) and UFSAR Section 6.4 (CR Emergency Air Treatment)
- (10) Westinghouse Analysis, "Report for the BAST Concentration for R.E. Ginna", August 1985 submitted by RG&E letter from R.W. Kober to H.R. Denton, dated October 16, 1985.

## ATTACHMENT B

In response to concerns determined following RG&E's review of Generic Letter 88-04, Potential Safety-Related Pump Loss, RG&E decided to make changes to the Safety Injection and Residual Heat Removal Pump recirculation systems. As a result of these expected modifications to the safety injection (SI) pump recirculation flow, the level of boric acid in the Boric Acid Storage Tanks (BAST) must be increased to be consistent with the assumptions made in the analysis submitted with our October 16, 1985 Technical Specification Amendment request. That analysis assumes 2000 gallons of 20,000 ppm boric acid solution is delivered to the Reactor Coolant System (RCS). This is the only transient analyzed in Chapter 15 of the UFSAR that requires high concentration boric acid to be delivered. The results of the loss of coolant accident analysis and the steam break accident analysis for core response satisfy the UFSAR acceptance criteria with 2000 ppm boric acid which is provided from the refueling water storage tank. Since the SI recirculation flow returns to the refueling water storage tank instead of the BAST, the inventory in the BAST must be increased to ensure 2000 gallons of 20,000 ppm solution is delivered to the RCS after the SI recirculation line is modified. Calculations using the RCS pressure vs. time for the most limiting containment integrity steam break and SI flow assumptions that maximize the recirculation loss were performed to determine a bounding initial BAST volume. These calculations show that a BAST inventory of 3110 gallons above the switchover to the RWST setpoint will ensure 2000 gallons of 20,000 ppm solution is delivered during the most limiting containment integrity steam break.

Since the requirements for 3110 gallons are associated with Safety Injection (SI) they have been added to the section of Specifications associated with SI. The requirements are only applicable when SI is required to be operable (1600 psig and 350°). Below 1600 psig or 350° the existing requirements in Section 3.2 are still applicable.

Table 1 depicts the specific Technical Specification changes.

In accordance with 10CFR50.91, these changes to the Technical Specifications have been evaluated to determine if the operation of the facility in accordance with the proposed amendment would:

1. involve a significant increase in the probability or consequences of an accident previously evaluated; or
2. create the possibility of a new or different kind of accident from any accident previously evaluated; or
3. involve a significant reduction in a margin of safety.

The proposed changes associated with the containment integrity analysis ensure the assumptions made in the analysis are met. By ensuring the assumptions used in the analysis are met, there is no increase in the probability or consequences of a previously evaluated accident. A new or different kind of accident is not created. There is no significant reduction in a margin of safety.

Therefore, Rochester Gas and Electric submits that the issues associated with this Amendment request are outside the criteria of 10CFR50.91 and a no significant hazards finding is warranted.



TABLE 1

DETAILED TECHNICAL SPECIFICATION CHANGES

<u>Location</u>	<u>Description of Change</u>	<u>Reason for Change</u>
Page 3.2-1 Section 3.2.2.c	Added "(See also Specification 3.3.1.1.j)".	Cross-reference tank volume requirements
Page 3.3-2a	Added new Specification 3.3.1.1.j	Requirement for 3110 gallons
Page 3.3-4 Section 3.3.1.6	Added new limiting condition for operation based on Standard Technical Specifications	Specify requirement if tank is inoperable
Page 3.3-4a	Renumbered Specification 3.3.1.6 to 3.3.1.7	Allow insertion of new Specification
	Renumbered Specification 3.3.1.6.1 to 3.3.1.7.1 and changed reference to 3.3.1.7	Allow insertion of new Specification
Page 3.3-14	Added Bases for 3110 gallon requirement	Requirement for 3110 gallons
	Deleted Reference (1), Section 9.3	Updated FSAR References to UFSAR References
	Changed Reference (2), Section 6.2 to Section 6.3.3.1	
	Changed Reference (3), Section 6.3 to 6.2.2.1	
	Changed Reference (4), Section 14.3.5 to 15.6.4.3	
	Changed Reference (5), Section 1.2 to 9.2.2.4	
	Changed Reference (6), Section 9.3 to 9.2.2.4	
	Deleted Reference (7), Section 14.3	
	Changed Reference (8), Section 9.4 to 9.2.1.2	



TABLE 1 (Cont'd)

DETAILED TECHNICAL SPECIFICATION CHANGES

<u>Location</u>	<u>Description of Change</u>	<u>Reason for Change</u>
Page 3.3-14	Changed Reference (9), Section 14.3.5 to 6.2.1.1 (Containment Integrity) and 6.4 (CR Emergency Air Treatment)	Updated FSAR References to UFSAR References
	Added Reference (10) "Westinghouse Analysis...October 16, 1985"	Additional reference

