ATTACHMENT 1

PROPOSED TECHNICAL SPECIFICATION CHANGE

## 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 ensure safe reactor operation.

### Specification

A. When fuel is in a 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.

B. For one-unit operation, the reactor shall not be critical unless the following Chemical and Volume Control System conditions are met:

1. Two charging pumps shall be operable and one charging pump from the opposite unit shall be operable.

2. Two boric acid transfer pumps shall be operable.

3. The boric acid tanks (tank associated with the unit plus the common tank) together shall contain a minimum of 4200 gallons of at least 11.5% (but not >13%) by weight boric acid solution at a temperature of at least 145°F.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.

5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

6. System piping, valves and control board indication required for the operation of the components enumerated in Specification 3.2.B.1 shall be operable.

C. For two-unit operation, the reactor shall not be critical unless the following Chemical and Volume Control System conditions are met:

1. Two charging pumps shall be operable per unit.

2. Three boric acid transfer pumps shall be operable.

3. When the common tank is in service, it shall be assigned to only one unit at a time. For that unit which has usage of the common tank, the boric acid tanks (unit's tank plus common tank) together shall contain a minimum of 4200 gallons of at least 11.5% (but not >13%) by weight boric acid solution at a temperature of at least 145°F.

   For that unit which does not have usage of the common tank, the unit's own tank shall contain a minimum of 4200 gallons of at least 11.5% (but not >13%) by weight boric acid solution at a temperature of at least 145°F.

   When the common tank is assigned to one unit, valves shall be positioned to establish a flow path to that unit and prevent flow to the other unit.

4. System piping and valves shall be operable to the extent of establishing two flow paths to the core; one flow path from the boric acid tanks to the charging pumps and a flow path from the refueling water storage tank to the charging pumps.

5. Two channels of heat tracing shall be operable for the flow paths requiring heat tracing.

D. The requirements of Specifications 3.2.B and 3.2.C above may be modified to allow one of the following components to be inoperable at any one time. If the system is not restored within the time period specified, the reactor shall be placed in hot shutdown conditions. If the requirements of Specifications 3.2.B and 3.2.C are not satisfied within an additional 48 hours, the reactor shall be placed in the cold shutdown condition.

1. One of the stipulated boric acid transfer pumps may be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.

2. Two charging pumps may be inoperable subject to the provisions of Specification 3.3.B.

3. One heat tracing circuit my be inoperable for a period not to exceed 24 hours provided immediate attention is directed to making repairs.

E. The requirements of Specifications 3.2.B.1 and 3.2.B.6, concerning the opposite unit's charging pumps and associated piping, valves and control board indications, may be modified to allow the following components to be inoperable.

1. The opposite unit's charging pumps may be inoperable for a period not to exceed 7 days provided immediate attention is directed to making repairs.

2. The cross tie piping, associated valves and control board instrumentation and controls may be inoperable for a period not to exceed 7 days provided immediate attention is directed to making repairs.

Basis

The Chemical and Volume Control System provides control of the Reactor Coolant System Boron inventory. This is normally accomplished by using boric acid transfer pumps which discharge to the suction of each unit's charging pumps. The Chemical and Volume Control System contains four boric acid transfer pumps. Two of these pumps are normally assigned to each unit, but valving and piping arrangements allow pumps to be shared such that three out of four pumps can service either unit. An alternate (not normally used) method of boration is to use the charging pumps taking suction directly from the refueling water storage tank. There are two sources of borated water available to the suction of the charging pumps through two different paths; one from the refueling water storage tank and one from the discharge of the boric acid transfer pumps.

A. The boric acid transfer pumps can deliver the boric acid tank contents (11.5% solution of boric acid) to the charging pumps.

B. The charging pumps can take suction from the volume control tank, the boric acid transfer pumps and the refueling water storage tank. Reference is made to Technical Specification 3.3.

The quantity of boric acid in storage from either the boric acid tanks or the refueling water storage tank is sufficient to borate the reactor coolant in order to reach cold shutdown at any time during core life.

Approximately 4200 gallons of the 11.5% solution of boric acid are required to meet cold shutdown conditions. Thus, a minimum of 4200 gallons in the boric acid tank is specified. An upper concentration limit of 13% boric acid in the tank is specified to maintain solution solubility at the specified low temperature limit of 145°F. For redundancy, two channels of heat tracing are installed on lines normally containing concentrated boric acid solution.

The Boric Acid Tank(s), which are located above the Boron Injection Tank(s), are supplied with level alarms which would annunciate if a leak in the system occurred.

For one-unit operation, it is required to maintain operable one charging pump with a source of borated water on the opposite unit, the associated piping and valving, and the associated instrumentation and controls in order to maintain the capability to cross-connect the two unit's charging pump discharge headers. In the event the operating unit's charging pumps become inoperable, this permits the opposite unit's charging pump to be used to bring the disabled unit to cold shutdown conditions. Initially, the need for the charging pump cross-connect was identified during fire protection reviews.

## REFERENCES

FSAR Sections 6.2, 9.1, 9.2 and 9.10

ATTACHMENT 2

SAFETY EVALUATION OF PROPOSED TECHNICAL SPECIFICATION CHANGE

## SAFETY EVALUATION

A review of the UFSAR has been performed. Sections 6.2, 9.2 and 9.10 address normal and emergency (including fires) reactivity control with charging pumps. The charging pump cross-tie is depicted in Section 9.1 on drawing sheet 2 but its description is not in the text. Implementation of the proposed specification will not affect existing UFSAR requirements provided that existing procedural controls and this proposed Technical Specification are followed.

The probability of occurrence or the consequences of an accident or malfunction of equipment important to safety and previously evaluated in the UFSAR will not be increased because the design bases of the CVCS System and Safety Injection System are maintained. A possibility for an accident or malfunction of a different type than any evaluated previously in the UFSAR will not be created because adherence to the specification serves to enhance alternate shutdown capability. The margin of safety as defined in the basis for any Technical Specification is not reduced. A review of the Technical Specifications has been performed. The proposed change to Specification 3.2 does not compromise any existing specification. Therefore the proposed specification does not constitute an unreviewed safety question per 10 CFR 50.59.

Implementation of the proposed specification has no safety implications. In fact, the specification will serve to enhance alternate shutdown capability.