## 1.0 DEFINITIONS

DEFINED TERMS -
1.1 The DEFINED TERMS of this section appear in capitalized type and are applicable throughout these Technical Specifications.

THERMAL POWER
1.2 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

RATED THERMAL POWER
1.3 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3250 MWt.

OPERATIONAL MODE
1.4 An OPERATIONAL MODE shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table 1.1 with fuel in the reactor vessel.

ACTION
1.5 ACTION shall be those additional requirements specified as corollary statements to each principle specification and shall be part of the specifications.

OPERABLE - OPERABILITY
1.6 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electric power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.1.3 The flow rate of reactor coolant through the reactor coolant system shall be greater than or equal to 2000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.*

APPLICABILITY: All MODES,

or

During movement of irradiated fuel assemblies within containment.

ACTION:

With the flow rate of reactor coolant through the reactor coolant system less than 2000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The flow rate of reactor coolant through the reactor coolant system shall be determined to be greater than or equal to 2000 gpm within one hour prior to the start of and at least once per hour during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one RHR pump is in operation and supplying greater than or equal to 2000 gpm through the reactor coolant system.

*For purposes of this specification, addition of water from the RWST does not constitute a dilution activity provided the boron concentration in the RWST is greater than or equal to the minimum required by specification 3.1.2.8.b.2 (MODES 1, 2, 3, and 4) or 3.1.2.7.b.2 (MODES 5 and 6).

3/4.1.2 BORATION SYSTEMS

FLOW PATHS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE:

a. A flow path from the boric acid tanks via a boric acid transfer pump and charging pump to the Reactor Coolant System if only the boric acid storage tank in Specification 3.1.2.7a is OPERABLE, or

b. The flow path from the refueling water storage tank via a charging pump to the Reactor Coolant System if only the refueling water storage tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one injection path is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Cycling each testable power operated or automatic valve in the flow path through at least one complete cycle of full travel.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.*

b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 170°F, unless the reactor vessel head is not secured to the vessel, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying that, on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2390 psig when tested pursuant to Specification 4.0.5 at least once per 31 days.

4.1.2.3.2 All charging pumps and safety injection pumps, excluding the above required OPERABLE charging pump, shall be demonstrated inoperable by verifying that the motor circuit breakers have been removed from their electrical power supply circuits at least once per 12 hours, except when:

a. The reactor vessel head is removed, or

b. The temperature of all RCS cold legs is greater than 170°F.

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*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

BORIC ACID TRANSFER PUMPS - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.5 At least one boric acid transfer pump shall be OPERABLE and capable of being powered from an OPERABLE emergency bus if only the flow path through the boric acid transfer pump of Specification 3.1.2.1a is OPERABLE.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With no boric acid transfer pump OPERABLE as required to complete the flow path of Specification 3.1.2.1a, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until at least one boric acid transfer pump is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.5 At least the above required boric acid transfer pump shall be demonstrated OPERABLE at least once per 7 days by:

a. Starting (unless already operating) the pump from the control room,

b. Verifying, that on recirculation flow, the pump develops a discharge pressure of greater than or equal to 110 psig,

c. Verifying pump operation for at least 15 minutes, and

d. Verifying that the pump is aligned to receive electrical power from an OPERABLE emergency bus.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

REACTIVITY CONTROL 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. A boric acid storage system and associated heat tracing with:

   1. A minimum usable borated water volume of 4300 gallons,
   2. Between 20,000 and 22,500 ppm of boron, and
   3. A minimum solution temperature of 145°F.

b. The refueling water storage tank with:

   1. A minimum usable borated water volume of 90,000 gallons,
   2. A minimum boron concentration of 2400 ppm, and
   3. A minimum solution temperature of 80°F.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With no borated water source 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 water level 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 RWST temperature when it is the source of borated water.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION

(OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4 3.3.1)

| OPERATION MODE/INSTRUMENT# | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| 1. Modes 1, 2, 3 & 4 | | | | |
| A) Area Monitor | | | | |
| i. Upper Containment+ (VRS 1101/1201) | 1 | N/A | Less than or equal to 54mR/hr | 21 |
| B) Process Monitors | | | | |
| i. Particulate Channel+ (ERS 1301/1401) | 1 | N/A | Less than or equal to 2.52uCi | 20 |
| ii. Noble Gas Channel+ (ERS 1305/1405) | 1 | N/A | Less than or equal to 4.4 x $10^{-3}$ $\frac{uCi}{cc}$ | 20 |
| C) Noble Gas Effluent Monitors | | | | |
| i. Unit Vent Effluent Monitor | | | | |
| a. Low Range (VRS 1505) | ------(See T/S Section 3.3.3.10)------ | | | |

TABLE 3.3-6 (Continued)
RADIATION MONITORING INSTRUMENTATION
(OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4 3.3.1)

| OPERATION MODE/INSTRUMENT# | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| ii. Gland Steam Condenser Vent Monitor | ------(See T/S Section 3.3.3.10)------ | | | |
| a. Low Range (SRA 1805) | | | | |
| iii. Steam Jet Air Ejector Vent Monitor | ------(See T/S Section 3.3.3.10)------ | | | |
| a. Low Range (SRA 1905) | | | | |
| 2. Mode 6, or Fuel in Containment | | | | |
| A) Train A | any 2/3 channels | | | 22 |
| i. Containment Area Radiation Channel+ (VRS 1101) | | N/A | Less than or equal to 54 mR/hr | |
| ii. Particulate Channel+ ERS 1301 | | N/A | Less than or equal to 2.52 uCi | |
| iii. Noble Gas Channel+ ERS 1305 | | N/A | Less than or equal to 4.4 x $10^{-3}$ $\frac{uCi}{cc}$ | |
| B) Train B | any 2/3 channels | | | 22 |
| i. Containment Area+ Radiation Channel (VRS 1201) | | N/A | Less than or equal to 54 mR/hr | |
| ii. Particulate Channel+ (ERS 1401) | | N/A | Less than or equal to 2.52 uCi | |

TABLE 3.3-6 (Continued)
RADIATION MONITORING INSTRUMENTATION
(OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4 3.3.1)

| OPERATION MODE/INSTRUMENT# | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| iii. Noble Gas Channel+ (ERS 1405) | | N/A | Less than or equal to $4.4 \times 10^{-3} \frac{uCi}{cc}$ | 22 |
| 3. With Fuel in Storage Pool or Building | | | | |
| A) Spent Fuel Storage | 1 | Less than or equal to 15 mR/hr | Less than or equal to 15 mR/hr | 21 |

\+ This specification applies only during purge.

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per day.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirements, and Specification 3.9.9 is applicable, then comply with Specification 3.9.9 Action Statement. This ACTION is not required during the performance of containment integrated leak rate test.

TABLE 4.4-3

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS**

| PARAMETER | MINIMUM ANALYSIS FREQUENCIES | MAXIMUM TIME BETWEEN ANALYSES |
|---|---|---|
| DISSOLVED OXYGEN | 3 times per 7 days* | 72 hours |
| CHLORIDE | 3 times per 7 days | 72 hours |
| FLUORIDE | 3 times per 7 days | 72 hours |

* Not required with Tavg less than or equal to 250°F

**Not required when the Reactor Coolant System is drained to half loop and RHR is removed from service.

## 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

### LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be greater than 70°F when the pressure of either coolant in the steam generator is greater than 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to less than or equal to 200 psig within 30 minutes, and

b. Perform an analysis to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200°F.

### SURVEILLANCE REQUIREMENTS

4.7.2.1 When the temperature of either the primary or secondary coolants is less than 70°F perform one of the following:

a. Verify primary and secondary pressure less than 200 psig hourly

b. Verify controls are in place which prevent pressure from exceeding 200 psig on the primary and secondary side once per 12 hours.

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.9.3 At least one of the following overpressure protection systems shall be OPERABLE:

a. Two power operated relief valves (PORVs) with a lift setting of less than or equal to 400 psig, or

b. One power operated relief valve (PORV) with a lift setting of less than or equal to 400 psig and the RHR safety valve with a lift setting of less than or equal to 450 psig, or

c. A reactor coolant system vent of greater than or equal to 2 square inches.

APPLICABILITY: When the temperature of one or more of the RCS cold legs is less than or equal to 170°F, except when the reactor vessel head is not secured to the vessel.

ACTION:

a. With two PORV's inoperable or with one PORV inoperable and the RHR safety valve inoperable, either restore the inoperable PORV(s) or RHR safety valve to OPERABLE status within 7 days or depressurize and vent the RCS through an at least 2 square inch vent(s) within the next 8 hours; maintain the RCS in a vented condition until the inoperable PORV or RHR safety valve has been restored to OPERABLE status.

b. With both PORVs inoperable, depressurize and vent the RCS through an at least 2 square inch vent(s) within 8 hours; maintain the RCS in a vented condition until both PORVs or one PORV and the RHR safety valve have been restored to OPERABLE status.

c. In the event either the PORVs, the RHR safety valve or the RCS vent(s) are used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or vent(s) on the transient and any corrective action necessary to prevent recurrence.

d. The provisions of Specification 3.0.4 are not applicable.

## SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

   1. A day fuel tank containing a minimum of 70 gallons of fuel,

   2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and

   3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During loaded crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes,* movement of irradiated fuel, or crane operation with loads over the fuel storage pool, until the minimum required A.C. electrical power sources are restored to OPERABLE status.

### SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

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*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.2 As a minimum, the following A.C. electrical busses shall be OPERABLE and energized:

1 - 4160-volt Emergency Bus, and

1 - 600-volt Emergency Bus, and

2 -*120-volt A.C. Vital Busses.

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During loaded crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS:

4.8.2.2 The specified A.C. busses shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

*Energized from its associated inverter connected to a DC bus.

## D.C. DISTRIBUTION - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

1 - 250-volt D.C. bus, and

1 - 250-volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During loaded crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With the required battery banks and/or full-capacity charger inoperable, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, initiate corrective action to restore the required battery bank and full-capacity charger to OPERABLE status as soon as possible, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than 2 square inch vent.

### SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250-volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250-volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

## 3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

### LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal loop shall be in operation.

APPLICABILITY: MODE 6,

or

During movement of irradiated fuel within containment.

ACTION:

a. With less than one residual heat removal loop in operation, except as provided in b. below, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System.* Immediately initiate corrective action to return at least one residual heat removal loop to OPERABLE status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

b. The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

c. The provisions of Specification 3.0.3 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.9.8.1 A residual heat removal loop shall be determined to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 2000 gpm at least once per 24 hours.

*For purposes of this specification, addition of water from the RWST does not constitute a dilution activity provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent Residual Heat Removal (RHR) loops shall be OPERABLE.*

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is less than 23 feet,

or

During movement of irradiated fuel within containment.

ACTION:

a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8.2 The required Residual Heat Removal loops shall be determined OPERABLE per Specification 4.0.5.

*The normal or emergency power source may be inoperable for each RHR loop.

## 3/4.1 REACTIVITY CONTROL SYSTEMS

## BASES

### 3/4.1.1 BORATION CONTROL

### 3/4.1.1.1 and 3/4.1.1.2 SHUTDOWN MARGIN

A sufficient SHUTDOWN MARGIN ensures that 1) the reactor can be made subcritical from all operating conditions, 2) the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and 3) the reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition.

SHUTDOWN MARGIN requirements vary throughout core life as a function of fuel depletion, RCS boron concentration, and RCS Tavg. The most restrictive condition for increased load events occurs at EOL, with Tavg at no load operating temperature, and is associated with a postulated steam line break accident and resulting uncontrolled RCS cooldown. In the analysis of this accident, a minimum SHUTDOWN MARGIN of 1.60% Delta k/k is initially required to control the reactivity transient and automatic ESF is assumed to be available. With Tavg less than 200°F, the reactivity transients resulting from a postulated steam line break cooldown are minimal and a 1% Delta k/k SHUTDOWN MARGIN provides adequate protection for this event.

### 3/4.1.1.3 BORON DILUTION

A minimum flow rate of at least 2000 GPM provides adequate mixing, prevents stratification and ensures that reactivity changes will be gradual during boron concentration reductions in the Reactor Coolant System. A flow rate of at least 2000 GPM will circulate an equivalent Reactor Coolant System volume of 12,612 +/- 100 cubic feet in approximately 30 minutes. The reactivity change rate associated with boron reductions will therefore be within the capability for operator recognition and control.

When no fuel is in the reactor vessel reactivity changes in the Reactor Coolant System are not a concern. However, prior to any irradiated fuel being moved into containment the minimum flow rate shall be established.

### 3/4.1.1.4 MODERATOR TEMPERATURE COEFFICIENT (MTC)

The limitations on MTC are provided to ensure that the assumptions used in the accident and transient analyses remain valid through each fuel cycle. The surveillance requirement for measurement of the MTC at the beginning, and near the end of each fuel cycle is adequate to confirm the MTC value since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup. The confirmation that the measured and appropriately compensated MTC value is within the allowable tolerance of the predicted value provides additional assurances that the coefficient will be maintained within its limits during intervals between measurement.

3/4.1.1.5 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 541°F. This limitation is required to ensure 1) the moderator temperature coefficient is within its analyzed temperature range, 2) the protective instrumentation is within its normal operating range, 3) the pressurizer is capable of being in an OPERABLE status with a steam bubble, and 4) the reactor pressure vessel is above its minimum $RT_{NDT}$ temperature. Administrative procedures will be established to ensure the P-12 blocked functions are unblocked before taking the reactor critical.

3/4.1.2 BORATION SYSTEMS

The boron injection system ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, 4) boric acid transfer pumps, 5) associated heat tracing systems, and 6) an emergency power supply from OPERABLE diesel generators.

Negative reactivity control in the Reactor Coolant System is not a concern when no fuel is in the reactor vessel. However, prior to any irradiated fuel being moved into containment the minimum flow paths shall be operable.

With the RCS average temperature above 200°F, a minimum of two separate and redundant boron injection 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 limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 170°F, unless the reactor vessel head is not secured to the vessel, provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

When the vessel head is not secured to the vessel, it is not a pressure barrier. This includes times when the reactor vessel head without the studs is resting on the reactor vessel flange or when the studs are inserted resting on the "mailboxes." (The "mailboxes" are devices which prevent the studs from engaging the threads in the reactor vessel flange.)

[illegible]

The pressure required to lift the head off the reactor with the studs removed is 14.29 psig. The pressure required to lift the head off the reactor with the added weight of the studs inserted resting on the mailboxes (approximately 38,000 lbs.) is 16.5 psig. Both of these pressure values are significantly less than the lift setting specified by the T/S for the PORVs and the RHR safety valve. As a result, cold overpressurization is not a concern if the reactor vessel head without studs is just lying on the vessel flange or if the reactor vessel head is lying on the vessel flange with the studs inserted resting on the mailboxes. T/S 3.1.2.3 and 3.4.9.3 are met in either case.

For the intent of meeting Action (b) of T/S 3.1.2.3, having either of the above conditions, i.e., the reactor vessel head with studs removed lying on the vessel flange or the reactor vessel head lying on the vessel flange with the studs inserted resting on the mailboxes, is equivalent to having the reactor vessel head removed.

The boration capability of either system is sufficient to provide a SHUTDOWN MARGIN from all operating conditions after xenon decay and cooldown to 200°F. The maximum expected boration capability usable volume requirement, is 5641 gallons of 20,000 ppm borated water from the boric acid storage tanks or 99,598 gallons of 2400 ppm borated water from the refueling water storage tank. The minimum contained RWST volume is based on ECCS considerations. See Section B 3/4.5.5.

With the RCS average temperature below 200°F, one injection 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 boration capability required below 200°F is sufficient to provide the required MODE 5 SHUTDOWN MARGIN after xenon decay and cooldown from 200°F to 140°F. This condition requires usable volumes of either 2890 gallons of 20,000 ppm borated water from the boric acid storage tanks or 76,937 gallons of 2400 ppm borated water from the refueling water storage tank. The boration source volumes of Technical Specification 3.1.2.7 have been conservatively increased to 4300 gallons from the boric acid storage tank volume includes sufficient boric acid to borate the 2000 ppm.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.6 and 9.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of boron injection system during REFUELING ensures that this system is available for reactivity control while in MODE 6. When no fuel is in the vessel RCS reactivity is not a concern. However, prior to any irradiated fuel being moved into containment the requirements of Specifications 3.1.1.3, 3.1.2.1, 3.1.2.3, 3.1.2.5, 3.1.2.7 shall be met.

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) limit the potential effects of rod ejection accident. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The ACTION statements which permit limited variations from the basic requirements are accompanied by additional restrictions which ensure that the original criteria are met. Misalignment of a rod requires measurement of peaking factors or a restriction in THERMAL POWER; either of these restrictions provide assurance of fuel rod integrity during continued operation. The reactivity worth of a misaligned rod is limited for the remainder of the fuel cycle to prevent exceeding the assumptions used in the accident analysis for a rod ejection accident.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the accident analyses. Measurement with $T_{avg}$ greater than or equal to 541°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCOs are satisfied.

## 3/4.3 INSTRUMENTATION

## BASES

### 3/4.3.1 and 3/4.3.2 PROTECTIVE AND ENGINEERED SAFETY FEATURES (ESF) INSTRUMENTATION

The OPERABILITY of the protective and ESF instrumentation systems and interlocks ensure that 1) the associated ESF action and/or reactor trip will be initiated when the parameter monitored by each channel or combination thereof exceeds its setpoint, 2) the specified coincidence logic is maintained, 3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance, and 4) sufficient system functional capability is available for protective and ESF purposes from diverse parameters.

The OPERABILITY of these systems is required to provide the overall reliability, redundancy and diversity assumed available in the facility design for the protection and mitigation of accident and transient conditions. The integrated operation of each of these systems is consistent with the assumptions used in the accident analyses.

The surveillance requirements specified for these systems ensure that the overall system functional capability is maintained comparable to the original design standards. The periodic surveillance tests performed at the minimum frequencies are sufficient to demonstrate this capability.

The measurement of response time at the specified frequencies provides assurance that the protective and ESF action function associated with each channel is completed within the time limit assumed in the accident analyses. No credit was taken in the analyses for those channels with response times indicated as not applicable.

Response time may be demonstrated by any series of sequential, overlapping or total channel test measurements provided that such tests demonstrate the total channel response time as defined. Sensor response time verification may be demonstrated by either 1) in place, onsite or offsite test measurements or 2) utilizing replacement sensors with certified response times.

### 3/4.3.3 MONITORING INSTRUMENTATION

#### 3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded. When the Containment Area, Particulate and Noble Gas Radiation Monitoring Instrumentation Channels detect an abnormally high radiation level they initiate containment isolation. However, when no fuel is in containment it is highly unlikely for a radiation hazard that could potentially have environmental consequences to develop.

The total steam generator tube leakage limit of 1 GPM for all steam generators not isolated from the RCS ensures that the dosage contribution from the tube leakage will be limited to a small fraction of Part 100 limits in the event of either a steam generator tube rupture or steam line break. The 1 GPM limit is consistent with the assumptions used in the analysis of these accidents. The 500 gpd leakage limit per steam generator ensures that steam generator tube integrity is maintained in the event of a main steam line rupture or under LOCA conditions.

PRESSURE BOUNDARY LEAKAGE of any magnitude is unacceptable since it may be indicative of an impending gross failure of the pressure boundary. Should PRESSURE BOUNDARY LEAKAGE occur through a component which can be isolated from the balance of the Reactor Coolant System, plant operation may continue provided the leaking component is promptly isolated from the Reactor Coolant System since isolation removes the source of potential failure.

The Surveillance Requirements for RCS Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS Pressure Isolation Valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

## 3/4.4.7 CHEMISTRY

The limitations on Reactor Coolant System chemistry ensure that corrosion of the Reactor Coolant System is minimized and reduces the potential for Reactor Coolant System leakage or failure due to stress corrosion. Maintaining the chemistry within the Steady State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride, and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady State Limits.

Since corrosion inhibitors are added to the reactor coolant, the threat of corrosion is minimized during this condition. Since it is impossible to obtain a representative coolant sample when the Reactor Coolant System is drained to half loop and RHR removed from service, sampling is not required under these conditions. However, prior to fuel being removed from or returned to the reactor vessel the Reactor Coolant System chemistry shall be determined to be within the limits by analysis of those parameters specified in Table 3.4-1.

BASES

When the vessel head is not secured to the vessel, it is not a pressure barrier. This includes times when the reactor vessel head without the studs is resting on the reactor vessel flange or when the studs are inserted resting on the "mailboxes." (The "mailboxes" are devices which prevent the studs from engaging the threads in the reactor vessel flange.)

The pressure required to lift the head off the reactor with the studs removed is 14.29 psig. The pressure required to lift the head off the reactor with the added weight of the studs inserted resting on the mailboxes (approximately 38,000 lbs.) is 16.5 psig. Both of these pressure values are significantly less than the lift setting specified by the T/S for the PORVs and the RHR safety valve. As a result, cold overpressurization is not a concern if the reactor vessel head is lying on the vessel flange with the studs inserted resting on the mailboxes. T/S 3.1.2.3 and 3.4.9.3 are met in either case.

For the intent of meeting Action (b) of T/S 3.1.2.3, having either of the above conditions, i.e., the reactor vessel head with studs removed lying on the vessel flange or the reactor vessel head lying on the vessel flange with the studs inserted resting on the mailboxes, is equivalent to having the reactor vessel head removed.

## 3/4.9 REFUELING OPERATIONS

## BASES

### 3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for $K_{eff}$ includes a 1 percent delta k/k conservative allowance for uncertainties. Similarly, the boron concentration value of 2000 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron. The boron concentration requirement of specification 3.9.1.b has been conservatively increased to 2400 ppm to agree with the minimum concentration of the RWST.

When no fuel is in the vessel maintaining the reactor subcritical and reactivity control in the water volume is not a concern.

### 3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core. When no fuel is in the vessel this is not a concern.

### 3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions are sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

### 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERNATIONS.

## 3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies 2) each crane has sufficient load capacity to lift a control rod or fuel assembly and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

## 3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel assembly over other fuel assemblies ensures that no more than the contents of one fuel assembly will be ruptured in the event of a fuel handling accident. This assumption is consistent with the activity release assumed in the accident analyses.

## 3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

When no fuel is in the vessel the residual heat removal system is not needed to remove decay heat. However, prior to any irradiated fuel being moved into containment the provisions of Specification 3.9.8.1 and 3.9.8.2 shall be met.

## 3/4.9.9 CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment. When no irradiated fuel is in containment, a radiation hazard that potentially could have environmental consequences is impossible.

## 1.0 DEFINITIONS

### DEFINED TERMS

1.1 The DEFINED TERMS of this section appear in capitalized type and are applicable throughout these Technical Specifications.

### THERMAL POWER

1.2 THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

### RATED THERMAL POWER

1.3 RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 3411 MWt.

### OPERATIONAL MODE

1.4 An OPERATIONAL MODE shall correspond to any one inclusive combination of core reactivity condition, power level and average reactor coolant temperature specified in Table 1.1 with fuel in the reactor vessel.

### ACTION

1.5 ACTION shall be those additional requirements specified as corollary statements to each principle specification and shall be part of the specifications.

### OPERABLE - OPERABILITY

1.6 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electrical power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component or device to perform its function(s) are also capable of performing their related support function(s).

REACTIVITY CONTROL SYSTEMS

BORON DILUTION

LIMITING CONDITION FOR OPERATION

3.1.1.3 The flow rate of reactor coolant through the reactor coolant system shall be greater than or equal to 2000 gpm whenever a reduction in Reactor Coolant System boron concentration is being made.*

APPLICABILITY: All MODES,

or

During movement of irradiated fuel assemblies within containment.

ACTION:

With the flow rate of reactor coolant through the reactor coolant system less than 2000 gpm, immediately suspend all operations involving a reduction in boron concentration of the Reactor Coolant System.

SURVEILLANCE REQUIREMENTS

4.1.1.3 The flow rate of reactor coolant through the reactor coolant system shall be determined to be greater than or equal to 2000 gpm within one hour prior to the start of and at least once per hour during a reduction in the Reactor Coolant System boron concentration by either:

a. Verifying at least one reactor coolant pump is in operation, or

b. Verifying that at least one RHR pump is in operation and. supplying greater than or equal to 2000 gpm through the reactor coolant system.

*For purposes of this specification, addition of water from the RWST does not constitute a dilution activity provided the boron concentration in the RWST is greater than or equal to the minimum required by specification 3.1.2.8.b.2 (MODES 1, 2, 3, and 4) or 3.1.2.7.b.2 (MODES 5 and 6).

## 3/4.1.2 BORATION SYSTEMS

### FLOW PATHS - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.1.2.1 As a minimum, one of the following boron injection flow paths shall be OPERABLE:

a. A flow path from the boric acid tanks via a boric acid transfer pump and charging pump to the Reactor Coolant System if only the boric acid storage tank in Specification 3.1.2.7a is OPERABLE, or

b. The flow path from the refueling water storage tank via a charging pump to the Reactor Coolant System if only the refueling water storage tank in Specification 3.1.2.7b is OPERABLE.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With none of the above flow paths OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until at least one injection path is restored to OPERABLE status.

### SURVEILLANCE REQUIREMENTS

4.1.2.1 At least one of the above required flow paths shall be demonstrated OPERABLE:

a. At least once per 7 days by verifying that the temperature of the heat traced portion of the flow path is greater than or equal to 145 when a flow path from the boric acid tanks is used.

b. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

## CHARGING PUMP - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.1.2.3 One charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

a. With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity.*

b. With more than one charging pump OPERABLE or with a safety injection pump(s) OPERABLE when the temperature of any RCS cold leg is less than or equal to 152°F, unless the reactor vessel head is not secured to the vessel, remove the additional charging pump(s) and the safety injection pump(s) motor circuit breakers from the electrical power circuit within one hour.

c. The provisions of Specification 3.0.3 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.1.2.3.1 The above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of greater than or equal to 2390 psig when tested pursuant to Specification 4.0.5.

4.1.2.3.2 All charging pumps and safety injection pumps, excluding the above required OPERABLE charging pump, shall be demonstrated inoperable by verifying that the motor circuit breakers have been removed from their electrical power supply circuits at least once per 12 hours, except when:

a. The reactor vessel head is removed, or

b. The temperature of all RCS cold legs is greater than 152°F.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

## BORIC ACID TRANSFER PUMPS - SHUTDOWN

### LIMITING CONDITION FOR OPERATION

3.1.2.5 At least one boric acid transfer pump shall be OPERABLE and capable of being powered from an OPERABLE emergency bus if only the flow path through the boric acid transfer pump of Specification 3.1.2.1a is OPERABLE.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With no boric acid transfer pump OPERABLE as required to complete the flow path of Specification 3.1.2.1a, suspend all operations involving CORE ALTERATIONS or positive reactivity changes* until at least one boric acid transfer pump is restored to OPERABLE status.

### SURVEILLANCE REQUIREMENTS

4.1.2.5 No additional Surveillance Requirements other than those required by Specification 4.0.5.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

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. A boric acid storage system and associated heat tracing with:

1. A minimum usable borated water volume of 4300 gallons,
2. Between 20,000 and 22,500 ppm of boron, and
3. A minimum solution temperature of 145$^{\circ}$F.

b. The refueling water storage tank with:

1. A minimum usable borated water volume of 90,000 gallons,
2. A minimum boron concentration of 2400 ppm, and
3. A minimum solution temperature of 80$^{\circ}$F.

APPLICABILITY: MODES 5 and 6,

or

During movement of fuel assemblies within containment.

ACTION:

With no borated water source 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, 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 RWST temperature when it is the source of borated water and the outside air temperature is less than 35$^{\circ}$F.

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*For purposes of this specification, addition of water from the RWST does not constitute a dilution activity provided the boron concentration in the RWST is greater than or equal to the minimum required by Specification 3.1.2.7.b.2.

## TABLE 3.3-6

### RADIATION MONITORING INSTRUMENTATION
### (OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4.3.3.1)

| OPERATION MODE/INSTRUMENT | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| 1. MODES 1,2,3 & 4 | | | | |
| A) Area Monitor | | | | |
| i. Upper Containment+ (VRS 2101/2201) | 1 | N/A | Less than or equal to 54mR/hr | 21 |
| B) Process Monitors | | | | |
| i. Particulate Channel+ (ERS 2301/2401) | 1 | N/A | Less than or equal to 2.52 uCi | 20 |
| ii. Noble Gas Channel+ (ERS 2305/2405) | 1 | N/A | Less than or equal $4.4 \times 10^{-3}$ $\frac{uCi}{cc}$ | 20 |
| C) Noble Gas Effluent Monitors | | | | |
| i. Unit Vent Effluent Monitor | | | | |
| a) Low Range (VRS 2505) | ----------(See T/S Section 3.3.3.10)-------- | | | |

TABLE 3.3-6 (Cont'd.)

RADIATION MONITORING INSTRUMENTATION
(OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4.3.3.1)

| OPERATION MODE/INSTRUMENT | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| ii. Gland Steam Condenser Vent Monitor | | | | |
| a) Low Range (SRA 2805) | ----------(See T/S Section 3.3.3.10)--------- | | | |
| iii. Steam Jet Air Ejector Vent Monitor | | | | |
| a) Low Range (SRA 2905) | ----------(See T/S Section 3.3.3.10)--------- | | | |
| 2. MODE 6, or Fuel in Containment | | | | |
| A) TRAIN A | any 2/3 channels | | | 22 |
| i. Containment Area Radiation Channel+ (VRS-2101) | | N/A | Less than or equal to 54mR/hr | |
| ii. Particulate Channel+ (ERS-2301) | | N/A | Less than or equal to 2.52 uCi | |
| iii. Noble Gas Channel+ (ERS-2305) | | N/A | Less than or equal to $4.4 \times 10^{-3}$ uCi/cc | |
| B) TRAIN B | any 2/3 channels | | | 22 |
| i. Containment Area+ Radiation Channel- (VRS-2201) | | N/A | Less than or equal to 54mR/hr | |
| ii. Particulate Channel+ (ERS-2401) | | N/A | Less than or equal to 2.52 uCi | |

TABLE 3.3-6 (Cont'd.)

RADIATION MONITORING INSTRUMENTATION
(OPERABILITY BASES DISCUSSED IN BASES SECTION 3/4.3.3.1)

| OPERATION MODE/INSTRUMENT | MINIMUM CHANNELS OPERABLE | ALARM SETPOINT | TRIP SETPOINT | ACTION |
|---|---|---|---|---|
| iii. Noble Gas Channel+ (ERS-2405) | | N/A | Less than or equal to $4.4 \times 10^{-3}$ $\frac{uCi}{cc}$ | 22 |
| 3. With Fuel in the Storage Pool or Building | | | | |
| A) Spent Fuel Storage (RRC-330) | 1 | Less than or equal to 15mR/hr | Less than or equal to 15mR/hr | 21 |

\+ This specification applies only during purge.

TABLE 3.3-6 (Continued)

TABLE NOTATION

ACTION 20 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirement, comply with the ACTION requirements of Specification 3.4.6.1.

ACTION 21 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirement, perform area surveys of the monitored area with portable monitoring instrumentation at least once per day.

ACTION 22 - With the number of channels OPERABLE less than required by the Minimum Channels Operable requirements and Specification 3.9.9 is applicable, then apply with Specification 3.9.9 Action Statement. This ACTION is not required during the performance of containment integrated leak rate test.

TABLE 4.4-3

REACTOR COOLANT SYSTEM

CHEMISTRY LIMITS SURVEILLANCE REQUIREMENTS**

| PARAMETER | SAMPLE AND ANALYSIS FREQUENCY |
|---|---|
| DISSOLVED OXYGEN* | At least once per 72 hours |
| CHLORIDE | At least once per 72 hours |
| FLUORIDE | At least once per 72 hours |

*Not required with Tavg less than or equal to 250°F.
**Not required when the Reactor Coolant System is drained to half loop and RHR is removed from service.

REACTOR COOLANT SYSTEM

OVERPRESSURE PROTECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.9.3 At least one of the following overpressure protection systems shall be OPERABLE:

a. Two power operated relief valves (PORVs) with a lift setting of less than or equal to 435 psig, or

b. One power operated relief valve (PORV) with a lift setting of less than or equal to 435 psig and the RHR safety valve with a lift setting of less than or equal to 450 psi, or

c. A reactor coolant system vent of greater than or equal to 2 square inches.

APPLICABILITY: When the temperature of one or more of the RCS cold legs is less than or equal to 152°F, except when the reactor vessel head is not secured to the vessel.

ACTION:

a. With two PORV's inoperable or with one PORV inoperable and the RHR safety valve inoperable, either restore the inoperable PORV or RHR safety valve to OPERABLE status within 7 days or depressurize and vent the RCS through an at least 2 square inch vent(s) within the next 8 hours; maintain the RCS in a vented condition until the inoperable PORV or RHR safety valve has been restored to OPERABLE status.

b. With both PORVs inoperable, depressurize and vent the RCS through an at least 2 square inch vent(s) within 8 hours; maintain the RCS in a vented condition until both PORVs or one PORV and the RHR safety valve have been restored to OPERABLE status.

c. In the event either the PORVs, the RHR safety valve or the RCS vent(s) are used to mitigate a RCS pressure transient, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 30 days. The report shall describe the circumstances initiating the transient, the effect of the PORVs or vent(s) on the transient and any corrective action necessary to prevent recurrence.

d. The provisions of Specification 3.0.4 are not applicable.

## 3/4.7.2 STEAM GENERATOR PRESSURE/TEMPERATURE LIMITATION

### LIMITING CONDITION FOR OPERATION

3.7.2.1 The temperatures of both the primary and secondary coolants in the steam generators shall be greater than 70$^{o}$F when the pressure of either coolant in the steam generator is greater than 200 psig.

APPLICABILITY: At all times.

ACTION:

With the requirements of the above specification not satisfied:

a. Reduce the steam generator pressure of the applicable side to less than or equal to 200 psig within 30 minutes, and

b. Perform an engineering evaluation to determine the effect of the overpressurization on the structural integrity of the steam generator. Determine that the steam generator remains acceptable for continued operation prior to increasing its temperatures above 200$^{o}$F.

### SURVEILLANCE REQUIREMENTS

4.7.2.1 When the temperature of either the primary or secondary coolants is less than 70$^{o}$F perform one of the following:

a. Verify primary and secondary pressure is less than 200 psig hourly,

b. Verify controls are in place which prevent pressure from exceeding 200 psig on the primary and secondary side once per 12 hours.

ELECTRICAL POWER SYSTEMS

SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.1.2 As a minimum, the following A.C. electrical power sources shall be OPERABLE:

a. One circuit between the offsite transmission network and the onsite Class 1E distribution system, and

b. One diesel generator with:

   1. A day fuel tank containing a minimum of 70 gallons of fuel,

   2. A fuel storage system containing a minimum of 42,000 gallons of fuel, and

   3. A fuel transfer pump.

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During loaded crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes*, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, until the minimum required A.C. electrical power sources are restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.8.1.2 The above required A.C. electrical power sources shall be demonstrated OPERABLE by the performance of each of the Surveillance Requirements of 4.8.1.1.1 and 4.8.1.1.2 except for requirement 4.8.1.1.2.a.5.

*For purposes of this specification, addition of water from the RWST does not constitute a positive reactivity addition provided the boron concentration in the RWST is greater than the minimum required by Specification 3.1.2.7.b.2.

ELECTRICAL POWER SYSTEMS

A.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following A.C. electrical busses shall be OPERABLE:

1 - 4160 volt Emergency Bus
1 - 600 volt Emergency Bus
2 - 120 volt A.C. Vital Busses

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With less than the above minimum required A.C. electrical power sources OPERABLE, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than or equal to 2 square inch vent. In addition, when in MODE 5 with the reactor coolant loops not filled, or in MODE 6 with the water level less than 23 feet above the reactor vessel flange, immediately initiate corrective action to restore the required sources to OPERABLE status as soon as possible.

SURVEILLANCE REQUIREMENTS

4.8.2.2 The specified A.C. busses shall be determined OPERABLE at least once per 7 days by verifying correct breaker alignment and indicated power availability.

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.8.2.4 As a minimum, the following D.C. electrical equipment and bus shall be energized and OPERABLE:

1 - 250 volt D.C. bus, and
1 - 250 volt battery bank and charger associated with the above D.C. bus.

APPLICABILITY: MODES 5 and 6,

or

During movement of irradiated fuel with no fuel assemblies in the reactor vessel,

or

During loaded crane operation over irradiated fuel assemblies with no fuel assemblies in the reactor vessel.

ACTION:

With the required battery banks and/or full-capacity charger inoperable, immediately suspend all operations involving CORE ALTERATIONS, positive reactivity changes, movement of irradiated fuel, or crane operation with loads over the fuel storage pool, initiate corrective action to restore the required battery bank and full-capacity charger to OPERABLE status as soon as possible, and within 8 hours, depressurize and vent the Reactor Coolant System through a greater than 2 square inch vent.

SURVEILLANCE REQUIREMENTS

4.8.2.4.1 The above required 250 volt D.C. bus shall be determined OPERABLE and energized at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.4.2 The above required 250 volt battery bank and charger shall be demonstrated OPERABLE per Surveillance Requirement 4.8.2.3.2.

## 3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

### LIMITING CONDITION FOR OPERATION

3.9.8.1 At least one residual heat removal loop shall be in operation.

APPLICABILITY: MODE 6,

or

During movement of irradiated fuel within containment.

ACTION:

a. With less than one residual heat removal loop in operation, except as provided in b. below, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System*. Immediately initiate corrective action to return at least one residual heat removal loop to OPERABLE status as soon as possible. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.

b. The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

c. The provisions of Specification 3.0.3 are not applicable.

### SURVEILLANCE REQUIREMENTS

4.9.8.1 A residual heat removal loop shall be determined to be in operation and circulating reactor coolant at a flow rate of greater than or equal to 2000 gpm at least once per 24 hours.

*For purposes of this specification, addition of water from the RWST does not constitute a dilution activity provided the boron concentration in the RWST is greater than or equal to the minimum required by specification 3.1.2.7.b.2.

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.8.2 Two independent Residual Heat Removal (RHR) loops shall be OPERABLE.*

APPLICABILITY: MODE 6 when the water level above the top of the reactor pressure vessel flange is less than 23 feet,

or

During movement of irradiated fuel within containment.

ACTION:

a. With less than the required RHR loops OPERABLE, immediately initiate corrective action to return the required RHR loops to OPERABLE status as soon as possible.

b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.3.2 The required Residual Heat Removal loops shall be determined OPERABLE per Specification 4.0.5.

*The normal or emergency power source may be inoperable for each RHR loop.

## 3/4.1.1 BORATION CONTROL

### 3/4.1.1.1 and 3/4.1.1.2 SHUTDOWN MARGIN

A sufficient SHUTDOWN MARGIN ensures that 1) the reactor can be made subcritical from all operating conditions, 2) the reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and 3) the reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition.

SHUTDOWN MARGIN requirements vary throughout core life as a function of fuel depletion, RCS boron concentration, and RCS $T_{avg}$. The most restrictive condition for increased load events occurs at EOL, with $T_{avg}$ at no load operating temperature, and is associated with a postulated steam line break accident and resulting uncontrolled RCS cooldown. In the analysis of this accident, a minimum SHUTDOWN MARGIN of 2.0% Delta k/k is initially required to control the reactivity transient and automatic ESF is assumed to be available.

Technical Specification requirements call for verification that the SHUTDOWN MARGIN is greater than or equal to that which would be required for the MODE 3 low temperature value, 350°F, prior to blocking safety injection on either the P-11 or P-12 permissive interlocks. This assures in the event of an inadvertent opening of two cooldown steam dump valves that adequate shutdown margin reactivity is available to allow the operator to identify and terminate the event.

With $T_{avg}$ less than 200°F, the reactivity transients resulting from a postulated steam line break cooldown are minimal and a 1% Delta k/k SHUTDOWN MARGIN provides adequate protection for this event.

In shutdown MODES 4 and 5 when heat removal is provided by the residual heat removal system, active reactor coolant system volume may be reduced. Increased SHUTDOWN MARGIN requirements when operating under these conditions is provided for high reactor coolant system boron concentrations to ensure sufficient time for operator response in the event of a boron dilution transient.

The SHUTDOWN MARGIN requirements are based upon the limiting conditions described above and are consistent with FSAR safety analysis assumptions.

### 3/4.1.1.3 BORON DILUTION

A minimum flow rate of at least 2000 GPM provides adequate mixing, prevents stratification and ensures that reactivity changes will be gradual during boron concentration reductions in the Reactor Coolant System. A flow rate of at least 2000 GPM will circulate an equivalent Reactor Coolant System volume of 12,612 cubic feet in approximately 30 minutes. The reactivity change rate associated with boron reductions will therefore be within the capability for operator recognition and control.

When no fuel is in the reactor vessel reactivity changes in the Reactor Coolant System are not a concern. However, prior to any irradiated fuel being moved into containment the minimum flow rate shall be established.

## 3/4.1 REACTIVITY CONTROL SYSTEMS

## BASES

### 3/4.1.1.4 MODERATOR TEMPERATURE COEFFICIENT (MTC)

The limitations on MTC are provided to ensure that the value of this coefficient remains within the limiting conditions assumed for this parameter in the FSAR accident and transient analyses.

The MTC values of this specification are applicable to a specific set of plant conditions; accordingly, verification of MTC values at conditions other than those explicitly stated will require extrapolation to those conditions in order to permit an accurate comparison.

It is confirmed by cycle specific neutronic analyses that the value of the MTC at EOC, HZP (All rods in) is greater than the value at EOC, HFP (All rods out), thus assuring that the surveillance at the latter condition is adequate to maintain MTC within safety analysis assumptions.

The surveillance requirements for measurement of the MTC at the beginning and near the end of each fuel cycle are adequate to confirm that the MTC remains within its limits since this coefficient changes slowly due principally to the reduction in RCS boron concentration associated with fuel burnup.

### 3/4.1.1.5 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 541°F. This limitation is required to ensure 1) the moderator temperature coefficient is within its analyzed temperature range, 2) the protective instrumentation is within its normal operating range, 3) the pressurizer is capable of being in a OPERABLE status with a steam bubble, and 4) the reactor pressure vessel is above its minimum $RT_{NDT}$ temperature. Administrative procedures will be established to ensure the P-12 blocked functions are unblocked before taking the reactor critical.

### 3/4.1.2 BORATION SYSTEMS

The boron injection system ensures that negative reactivity control is available during each mode of facility operation. The components required to perform this function include 1) borated water sources, 2) charging pumps, 3) separate flow paths, 4) boric acid transfer pumps, 5) associated heat tracing systems, and 6) an emergency power supply from OPERABLE diesel generators.

Negative reactivity control in the Reactor Coolant System is not a concern when no fuel is in the reactor vessel. However, prior to any irradiated fuel being moved into containment the minimum flow paths shall be operable.

With the RCS average temperature below 200°F, a minimum of two separate and redundant boron injection 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 limitation for a maximum of one centrifugal charging pump to be OPERABLE and the Surveillance Requirement to verify all charging pumps and safety injection pumps, except the required OPERABLE charging pump, to be inoperable below 152°F, unless the reactor vessel head is not secured to the vessel, provides assurance that a mass addition pressure transient can be relieved by the operation of a single PORV.

When the vessel head is not secured to the vessel, it is not a pressure barrier. This includes times when the reactor vessel head without the studs is resting on the reactor vessel flange or when the studs are inserted resting on the "mailboxes." (The "mailboxes" are devices which prevent the studs from engaging the threads in the reactor vessel flange.)

The pressure required to lift the head off the reactor with the studs removed is 14.29 psig. The pressure required to lift the head off the reactor with the added weight of the studs inserted resting on the mailboxes (approximately 38,000 lbs.) is 16.5 psig. Both of the pressure values are significantly less than the lift setting specified by the T/S for the PORVs and the RHR safety valve. As a result, cold overpressurization is not a concern if the reactor vessel head without studs is just lying on the vessel flange or if the reactor vessel head is lying on the vessel flange with the studs inserted resting on the mailboxes. T/S 3.1.2.3 and 3.4.9.3 are met in either case.

For the intent of meeting Action (b) of T/S 3.1.2.3, having either of the above conditions, i.e., the reactor vessel head with studs removed lying on the vessel flange or the reactor vessel head lying on the vessel flange with the studs inserted resting on the mailboxes, is equivalent to having the reactor vessel head removed.

The boration capability of either system is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions after xenon decay and cooldown to 200°F. The maximum expected boration capability usable volume requirement is 3700 gallons of 20,000 ppm borated water from the boric acid storage tanks or 118,000 gallons of borated water from the refueling water storage tank. The required RWST volume is based on an assumed boron concentration of 2000 ppm. The minimum RWST boron concentration required by the post-LOCA long-term cooling analysis is 2400 ppm. The minimum contained RWST volume is based on ECCS considerations. See Section B 3/4.5.5. The boration source volume from the boric acid storage tank has conservatively been increased to 5650 gallons. This value was chosen to be consistent with Unit 1.

## 3/4.1 REACTIVITY CONTROL SYSTEMS

### BASES

With the RCS average temperature below 200°F, one injection 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 sufficient to provide the required MODE 5 SHUTDOWN MARGIN after xenon decay and cooldown from 200°F to 140°F. This condition requires usable volumes of either 4300 gallons of 20,000 ppm borated water from the boric acid storage tanks or 90,000 gallons of borated water from the refueling water storage tank. The value for the boric acid storage tank volume includes sufificent boric acid to borate to 2000 ppm. The required RWST volume is based on an assumed boron concentration of 2000 ppm. The minimum RWST boron concentration required by the post-LOCA long-term cooling analysis is 2400 ppm.

The limits on contained water volume and boron concentration of the RWST also ensure a pH value of between 7.6 and 9.5 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components.

The OPERABILITY of boron injection system during MODE 6 ensures that this system is available for reactivity control. When no fuel is in the vessel, RCS reactivity is not a concern. However, prior to any irradiated fuel being moved into containment the requirements of Specifications 3.1.1.3, 3.1.2.1, 3.1.2.3, 3.1.2.5, 3.1.2.7 shall be met.

### 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) limit the potential effects of rod misalignment on associated accident analyses. OPERABILITY of the control rod position indicators is required to determine control rod positions and thereby ensure compliance with the control rod alignment and insertion limits.

The ACTION statements which permit limited variations from the basic requirements are accompanies by additional restrictions which ensure that the original design criteria are met. Misalignment of a rod requires measurement of peaking factors or a restriction in THERMAL POWER; either of these restrictions provide assurance of fuel rod integrity during continued operation. In addition, those accident analyses affected by a misaligned rod are reevaluated to confirm that the results remain valide during future operation.

The maximum rod drop time restriction is consistent with the assumed rod drop time used in the accident analyses. Measurement with $T_{avg}$ greater than or equal to 541°F and with all reactor coolant pumps operating ensures that the measured drop times will be representative of insertion times experienced during a reactor trip at operating conditions.

3/4.1.3 MOVABLE CONTROL ASSEMBLIES (Continued)

Control rod positions and OPERABILITY of the rod position indicators are required to be verified on a nominal basis of once per 12 hours with more frequent verifications required if an automatic monitoring channel is inoperable. These verification frequencies are adequate for assuring that the applicable LCOs are satisfied.

3/4.3.3 MONITORING INSTRUMENTATION

3/4.3.3.1 RADIATION MONITORING INSTRUMENTATION

The OPERABILITY of the radiation monitoring channels ensures that 1) the radiation levels are continually measured in the areas served by the individual channels and 2) the alarm or automatic action is initiated when the radiation level trip setpoint is exceeded. When the Containment Area, Particulate and Noble Gas Radiation Monitoring Instrumentation Channels detect an abnormally high radiation level they initiate containment isolation. However, when no irradiated fuel is in containment it is highly unlikely for a radiation hazard that could potentially have environmental consequences to develop.

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the reactor core. The OPERABILITY of this system is demonstrated by irradiating each detector used and normalizing its respective output.

3/4.3.3.3 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data is available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. For the meteorological instrumentation, the required channel check consists of a qualitative assessment of channel behavior during operation by observation. For the 10m wind speed and wind direction instruments the channel check also includes, when possible, a comparison of channel indicators.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criteria 19 of 10 CFR 50.

The CONTROLLED LEAKAGE limitation restricts operation when the total flow supplied to the reactor coolant pump seals exceeds 52 GPM. This limitation ensures that in the event of a LOCA, the safety injection flow will not be less than assumed in the accident analyses.

The total steam generator tube leakage limit of 1 GPM for all steam generators not isolated from the RCS ensures that the dosage contribution from the tube leakage will be limited to a small fraction of Part 100 limits in the event of either a steam generator tube rupture or steam line break. The 1 GPM limit is consistent with the assumptions used in the analysis of these accidents. The 500 gpd leakage limit per steam generator ensures that steam generator tube integrity is maintained in the event of a main steam line rupture or under LOCA conditions.

PRESSURE BOUNDARY LEAKAGE of any magnitude is unacceptable since it may be indicative of an impending gross failure of the pressure boundary. Should PRESSURE BOUNDARY LEAKAGE occur through a component which can be isolated from the balance of the Reactor Coolant System plant operation may continue provided the leaking component is promptly isolated from the Reactor Coolant System since isolation removes the source of potential failure.

The Surveillance Requirements for RCS Pressure Isolation Valves provide added assurance of valve integrity thereby reducing the probability of gross valve failure and consequent intersystem LOCA. Leakage from the RCS Pressure Isolation Valves is IDENTIFIED LEAKAGE and will be considered as a portion of the allowed limit.

3/4.4.7 CHEMISTRY

The limitations on Reactor Coolant System chemistry ensure that corrosion of the Reactor Coolant System is minimized and reduces the potential for Reactor Coolant System leakage or failure due to stress corrosion. Maintaining the chemistry within the Steady State Limits provides adequate corrosion protection to ensure the structural integrity of the Reactor Coolant System over the life of the plant. The associated effects of exceeding the oxygen, chloride, and fluoride limits are time and temperature dependent. Corrosion studies show that operation may be continued with contaminant concentration levels in excess of the Steady State Limits, up to the Transient Limits, for the specified limited time intervals without having a significant effect on the structural integrity of the Reactor Coolant System. The time interval permitting continued operation within the restrictions of the Transient Limits provides time for taking corrective actions to restore the contaminant concentrations to within the Steady State Limits.

Since corrosion inhibitors are added to the reactor coolant, the threat of corrosion is minimized during this condition. Since it is impossible to obtain a representative coolant sample when the Reactor Coolant System is drained to half loop and RHR removed from service, sampling is not required under these conditions. However, prior to fuel being removed from or returned to the reactor vessel the Reactor Coolant System chemistry shall be determined to be within the limits by analysis of those parameters specified in Table 3.4-1.

The actual shift in $RT_{NDT}$ of the vessel material will be established periodically during operation by removing and evaluating, in accordance with ASTM E185-73, reactor vessel material irradiation surveillance specimens installed near the inside wall of the reactor vessel in the core area. Since the neutron spectra at the irradiation samples and vessel inside radius are essentially identical, the measured transition shift for a sample can be applied with confidence to the adjacent section of the reactor vessel. The heatup and cooldown curves must be recalculated when the Delta $RT_{NDT}$ determined from the surveillance capsule is different from the calculated Delta $RT_{NDT}$ for the equivalent capsule radiation exposure.

The pressure-temperature limit lines shown on Figure 3.4-2 for reactor criticality and for inservice leak and hydrostatic testing have been provided to assure compliance with the minimum temperature requirements of Appendix G to 10 CFR 50.

The number of reactor vessel irradiation surveillance specimens and the frequencies for removing and testing these specimens are provided in Table 4.4-5 to assure compliance with the requirements of Appendix H to 10 CFR Part 50.

The limitations imposed on pressurizer heatup and cooldown and spray water temperature differential are provided to assure that the pressurizer is operated within the design criteria assumed for the fatigue analysis performed in accordance with the ASME Code requirements.

The OPERABILITY of two PORVs, one PORV and the RHR safety valve, or an RCS vent opening of greater than or equal to 2 square inches ensures that the RCS will be protected from pressure transients which could exceed the limits of Appendix G to 10 CFR Part 50 when one or more of the RCS cold legs are less than or equal to 152°F. Either PORV or RHR safety valve has adequate relieving capability to protect the RCS from overpressurization when the transient is limited to either (1) the start of an idle RCP with the secondary water temperature of the steam generator legs than or equal to 50°F above the RCS cold leg temperatures or (2) the start of a charging pump and its injection into a water solid RCS.

When the vessel head is not secured to the vessel, it is not a pressure barrier. This includes times when the reactor vessel head without the studs is resting on the reactor vessel flange or when the studs are inserted resting on the "mailboxes." (The "mailboxes" are devices which prevent the studs from engaging the threads in the reactor vessel flange.)

The pressure requird to lift the head off the reactor with the studs removed is 14.29 psig. The pressure required to lift the head off the reactor with the added weight of the studs inserted resting on the mailboxes (approximately 38,000 lbs.) is 16.5 psig. Both of these pressure values are significantly less than the lift setting specified by the T/S for the PORVs and the RHR safety valve. As a result, cold overpressurization is not a concern if the reactor vessel head without studs is just lying on the vessel flange or if the reactor vessel head is lying on the vessel flange with the studs inserted resting on the mailboxes. T/S 3.1.2.3 and 3.4.9.3 are met in either case.

For the intent of meeting Action (b) of T/S 3.1.2.3, having either of the above conditions, i.e., the reactor vessel head with studs removed lying on the vessel flange or the reactor vessel head lying on the vessel flange with the studs inserted resting on the mailboxes, is equivalent to having the reactor vessel head removed.

3/4.4.10 STRUCTURAL INTEGRITY

The inspection and testing programs for ASME Code Class 1, 2 and 3 components ensure that the structural integrity of these components will be maintained at an acceptable level throughout the life of the plant. To the extent applicable, the inspection program for these components is in compliance with Section XI of the ASME Boiler and Pressure Vessel Code.

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in the water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for $K_{eff}$ includes a 1 percent delta k/k conservative allowance for uncertainties. Similarly, the boron concentration value of 2000 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron. The boron concentration requirement of specification 3.9.1.b has been conservatively increased to 2400 ppm to agree with the minimum concentration of the RWST.

When no fuel is in the vessel maintaining the reactor subcritical and reactivity control in the water volume is not a concern.

3/4.4.11 RELIEF VALVES

The power operated relief valves (PORVs) operate to relieve RCS pressure below the setting of the pressurizer code safety valves. These relief valves have remotely operated block valves to provide a positive shutoff capability should the relief valve become inoperable. The electrical power for both the relief valves and the block valves is supplied from an emergency power source to ensure the ability to seal this possible RCS leakage path.

3/4.4.12 REACTOR COOLANT VENT SYSTEM

The Reactor Coolant Vent System is provided to exhaust noncondensible gases and/or steam from the primary system that could inhibit natural circulation core cooling. It has been designed to vent a volume of hydrogen approximately equal to one-half of the Reactor Coolant System volume in one hour at system design pressure and temperature.

The Reactor Coolant Vent System is comprised of the reactor vessel head vent system and the pressurizer steam space vent system. Each of these subsystems consists of a single line containing a common manual isolation valve inside containment, splitting into two parallel flow paths. Each flow

3/4.4.12 REACTOR COOLANT VENT SYSTEM (Continued)

path provides the design basis venting capacity and contains two 1E DC powered solenoid isolation valves, which will fail closed. This valve configuration/redundancy serves to minimize the probability of inadvertent or irreversible actuation while ensuring that single fialure of a remotely-operated vent valve, power supply, or control system does not prevent isolation of the vent path. The pressurizer steam space vent is independent of the PORVs and safety valves and is specifically designed to exhaust gases from the pressurizer in a very high radiation environment. In addition, the OPERABILITY of one reactor vessel head vent path and one pressurizer steam space vent path will ensure that the capability exists to perform this venting function.

The function, capabilities, and testing requirements of the reactor coolant vent system are consistent with the requirements of Item II.B.1 of NUREG-0737, "Clarification of TMI Action Plan Requirement," November 1980.

The minimum required systems to meet the specification and not enter into an action statement are one vent path from the reactor vessel head and one vent path from the pressurizer steam space.

## 3/4.9 REFUELING OPERATIONS

## BASES

### 3/4.9.1 BORON CONCENTRATION

The limitations on reactivity conditions during REFUELING ensure that: 1) the reactor will remain subcritical during CORE ALTERATIONS, and 2) a uniform boron concentration is maintained for reactivity control in teh water volume having direct access to the reactor vessel. These limitations are consistent with the initial conditions assumed for the boron dilution incident in the accident analyses. The value of 0.95 or less for $K_{eff}$ includes a 1 percent delta k/k conservative allowance for uncertainties. Similarly, the boron concentration value of 2000 ppm or greater includes a conservative uncertainty allowance of 50 ppm boron. The boron concentration requirement of Specification 3.9.1.b has been conservatively increased to 2400 ppm to agree with the minimum concentration of the RWST.

When no fuel is in the vessel maintaining the reactor subcritical and reactivity control in the water volume is not a concern.

### 3/4.9.2 INSTRUMENTATION

The OPERABILITY of the source range neutron flux monitors ensures that redundant monitoring capability is available to detect changes in the reactivity condition of the core. When no fuel is in the vessel this is not a concern.

### 3/4.9.3 DECAY TIME

The minimum requirement for reactor subcriticality prior to movement of irradiated fuel assemblies in the reactor pressure vessel ensures that sufficient time has elapsed to allow the radioactive decay of the short lived fission products. This decay time is consistent with the assumptions used in the accident analyses.

### 3/4.9.4 CONTAINMENT BUILDING PENETRATIONS

The requirements on containment building penetration closure and OPERABILITY ensure that a release of radioactive material within containment will be restricted from leakage to the environment. The OPERABILITY and closure restrictions arc sufficient to restrict radioactive material release from a fuel element rupture based upon the lack of containment pressurization potential while in the REFUELING MODE.

### 3/4.9.5 COMMUNICATIONS

The requirement for communications capability ensures that refueling station personnel can be promptly informed of significant changes in the facility status or core reactivity conditions during CORE ALTERATIONS.

3/4.9.6 MANIPULATOR CRANE OPERABILITY

The OPERABILITY requirements for the manipulator cranes ensure that: 1) manipulator cranes will be used for movement of control rods and fuel assemblies, 2) each crane has sufficient load capacity to lift a control rod or fuel assembly, and 3) the core internals and pressure vessel are protected from excessive lifting force in the event they are inadvertently engaged during lifting operations.

3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE BUILDING

The restriction on movement of loads in excess of the nominal weight of a fuel and control rod assembly and associated handling tool over other fuel assemblies in the storage pool ensures that in the event this load is dropped 1) the activity release will be limited to that contained in a single fuel assembly, and 2) any possible distortion of fuel in the storage rocks will not result in a critical array. This assumption is consistent with the activity release assumed in the accident analysis.

3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION

The requirement that at least one residual heat removal (RHR) loop be in operation ensures that (1) sufficient cooling capacity is available to remove decay heat and maintain the water in the reactor pressure vessel below 140°F as required during the REFUELING MODE, and (2) sufficient coolant circulation is maintained through the reactor core to minimize the effect of a boron dilution incident and prevent boron stratification.

The requirement to have two RHR loops OPERABLE when there is less than 23 feet of water above the reactor pressure vessel flange ensures that a single failure of the operating RHR loop will not result in a complete loss of residual heat removal capability. With the reactor vessel head removed and 23 feet of water above the reactor pressure vessel flange, a large heat sink is available for core cooling. Thus, in the event of a failure of the operating RHR loop, adequate time is provided to initiate emergency procedures to cool the core.

When no fuel is in the vessel the residual heat removal system is not needed to remove decay heat. However, prior to any fuel being moved into containment the provisions of Specification 3.9.8.1 and 3.9.8.2 shall be met.

3/4.9.9 CONTAINMENT PURGE AND ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment vent and purge penetrations will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment. When no irradiated fuel is in containment, a radiation hazard that potentially could have environmental consequences is impossible.

3/4.9.10 AND 3/4.9.11 WATER LEVEL - REACTOR VESSEL AND STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth is available to remove 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly. The minimum water depth is consistent with the assumptions of the accident analysis. Water level above the vessel flange in MODE 6 will vary as the reactor vessel head and the system internals are removed. The 23 feet of water are required before any subsequent movement of fuel assemblies or control rods.

3/4.9.12 STORAGE POOL VENTILATION SYSTEM

The limitations on the storage pool ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the accident analyses.

The 1980 version of ANSI N510 is used as a testing guide. This standard, however, is intended to be rigorously applied only to systems which, unlike the storage pool ventilation system, are designed to ANSI N509 standards. For the specific case of air-aerosol mixing uniformity test required by ANSI N510 as a prerequisite to in-place leak testing of charcoal and HEPA filters, the air-aerosol uniform mixing test acceptance criteria were not rigorously met. For this reason, a statistical correction factor will be applied to applicable surveillance test results where required.

In order to maintain the minimum negative pressure required by Technical Specifications (1/8 inch W.G.) during movement of fuel within the storage pool or during crane operation with loads over the pool, the crane bay roll-up door and the drumming room roll-up door, located on the 609-foot elevation of the auxiliary building, must be closed. However, they may be opened during these operations under administrative control. If the crane bay door needs to be opened during fuel movement, an example of an administrative control might be to station an individual at the door who would be in communication with personnel in the spent fuel pool area and could open the door when passage was completed or in the event of an emergency. For the drumming room door, an example of an administrative control might be to require the door to be reclosed after normal ingress and egress of personnel or material, or to station an individual at the door if the door needs to remain open for an extended period of time.

Attachment 1 to AEP:NRC:1036

Reasons and 10 CFR 50.92
Analyses for Changes to the Donald C. Cook Nuclear Plant
Units 1 and 2 Technical Specifications

Background

Changes to Sections 3.0 and 4.0 of the Standard Technical Specifications (T/Ss) were suggested in Generic Letter 87-09. The changes were developed by the NRC as part of a program to improve T/Ss, which was undertaken in cooperation with the Atomic Industrial Forum. The changes suggested in Generic Letter 87-09 addressed three specific problems with Sections 3.0 and 4.0 of the T/Ss, made editorial and administrative changes throughout Sections 3.0 and 4.0, and expanded the Bases section so that it reflects the new changes and better explains the rationale behind the Section 3.0 and 4.0 T/Ss. The three specific problems corrected by the Generic Letter 87-09 T/Ss are discussed below.

Problem 1: Unnecessary Restrictions on Mode Changes (Changes Involving T/S 3.0.4)

Specification 3.0.4 of the Standard T/Ss states that entry into an operational mode or other specified condition shall not be made unless the LCO (Limiting Condition for Operation) is met without reliance on the provisions of the Action Requirements. Its intent is to ensure that a higher mode of operation is not entered when equipment is inoperable or when parameters exceed their specified limits. This precludes a plant start-up when actions are being taken to satisfy an LCO, which, if not completed within the time limits of the Action Requirements, would result in a plant shut-down to comply with the Action Requirements.

Specification 3.0.4 also precludes entering a mode or specified condition if an LCO is not met, even if the Action Requirements would permit continued operation of the facility for an unlimited period of time. Generally, the individual specifications that have Action Requirements that allow continued operation note that Specification 3.0.4 does not apply. However, exceptions to Specification 3.0.4 have not been consistently applied and their bases are not well documented. For example, approximately two-thirds of the actions that permit continued operation in the Westinghouse Standard T/Ss are exempt from Specification 3.0.4.

Inconsistent application of exceptions to Specification 3.0.4 impacts the operation of the facility in two ways. First, it delays start-up under conditions in which conformance to the Action Requirements establishes an acceptable level of safety for unlimited continued operation of the facility. Second, it delays a return to power operation when the facility is required to be in a lower mode of operation as a consequence of other Action Requirements. In this case, the LCO must be met without reliance

on the Action Requirements before returning the facility to that operational mode or other specified condition for which unlimited continued operation was previously permitted in accordance with the Action Requirements.

In Generic Letter 87-09, the NRC stated:

> Specification 3.0.4 unduly restricts facility operation when conformance to the Action Requirements provides an acceptable level of safety for continued operation. For an LCO that has Action Requirements permitting continued operation for an unlimited period of time, entry into an operational mode or other specified condition of operation should be permitted in accordance with those Action Requirements. This is consistent with NRC's regulatory requirements for an LCO. The restriction on a change in operational modes or other specified conditions should apply only where the Action Requirements establish a specified time interval in which the LCO must be met or a shutdown of the facility would be required....

Consistent with the NRC's position as described above, Generic Letter 87-09 recommended modifying T/S 3.0.4 such that it states:

> Entry into an OPERATIONAL MODE or other specified condition shall not be made when the conditions for the Limiting Conditions for Operation are not met and the associated ACTION requires a shutdown if they are not met within a specified time interval. Entry into an OPERATIONAL MODE or specified condition may be made in accordance with ACTION requirements when conformance to them permits continued operation of the facility for an unlimited period of time.

With regard to this problem, Generic Letter 87-09 noted that adoption of the suggested change would eliminate the need for an exemption to T/S 3.0.4 for T/Ss with Action Requirements permitting continued operation of the facility. The Generic Letter recommended deleting the exemptions from these T/Ss so as to avoid confusion about the applicability of T/S 3.0.4. We have followed this recommendation, and have deleted the T/S 3.0.4 exemptions as appropriate. The specific T/Ss involved are listed under the "Description of Changes" section provided later in this attachment.

We are also proposing to add a T/S 3.0.4 exemption to Unit 1 T/S 3.3.3.5 (Remote Shutdown Instrumentation). The exemption has not been proposed for deletion from the Unit 2 T/S, since the Action Statement only allows operation for 30 days with inoperable

[illegible]

instrumentation. The addition of the Unit 1 exemption will make the Unit 1 T/Ss more similar to the Unit 2 T/Ss and to all revisions of the Standard T/Ss. We note that Unit 1 was the pilot plant for the Standard T/Ss, and that the Unit 1 T/Ss were issued before Rev. 0 of the Standard T/Ss was published. By the time Rev. 0 was issued, it was recognized that a T/S 3.0.4 exemption should be provided for the remote shutdown instrumentation, but the exemption was never added to the Unit 1 T/Ss. The Unit 2 T/Ss were based on a later version of the Standard T/Ss, and therefore include the exemption. We believe this change is justified because it is consistent with the previously approved Unit 2 T/Ss and the Standard T/Ss.

Problem 2: Unnecessary Shutdowns Caused by Inadvertent Surpassing of Surveillance Intervals

T/S 4.0.3 states that performance of a Surveillance Requirement within the specified time interval constitutes compliance with operational requirements for an LCO and associated Action Requirements. Thus, if a Surveillance Requirement is not met as a result of a failure to perform a required surveillance, the LCO would not be met and the appropriate Action Requirement must be met. Generally, the Action Requirements include a specified time interval (i.e., allowable outage time limit) that permits corrective action to be taken to satisfy the LCO. When such a specified time interval is included in the Action Requirements, the completion of a missed surveillance within this time interval satisfies Specification 4.0.3.

Some Action Requirements have allowable outage time limits of only one or two hours and do not establish a practical time limit for the completion of a missed Surveillance Requirement. If surveillances cannot be completed within these time limits, a plant shutdown would usually be required. Even if the Action Requirements include remedial measures that would permit continued operation, they may be stated in such a way that they could prevent the performance of the required surveillance. A plant shutdown is also required if the missed surveillance applies to more than the minimum number of systems or components required to be operable for operation under the allowable outage time limits of the Action Requirements. In this case, the individual specification or Specification 3.0.3 would require a shutdown.

As the NRC stated in Generic Letter 87-09,

> It is overly conservative to assume that systems or components are inoperable when a surveillance requirement has not been performed. The opposite is in fact the case; the

> vast majority of surveillances demonstrate that systems or components in fact are operable. When a surveillance is missed, it is primarily a question of operability that has not been verified by the performance of the required surveillance. Because the allowable outage time limits of some Action Requirements do not provide an appropriate time limit for performing a missed surveillance before shutdown requirements may apply, the T/S should include a time limit that would allow a delay of the required actions to permit the performance of the missed surveillance.

In Generic Letter 87-09, the NRC concluded that 24 hours would be an acceptable time limit for completing a missed surveillance when the allowable outage times of the Action Requirements are less than this time limit or when shutdown Action Requirements apply. Accordingly, Generic Letter 87-09 recommended modifying T/S 4.0.3 such that it states:

> Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Specification 4.0.2, shall constitute noncompliance with the OPERABILITY requirements for a Limiting Condition for Operation. The time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours.

Problem 3: Conflicts Between Specifications 4.0.3 and 4.0.4 Related to Mode Changes

Part 1 - Surveillance Requirements That Become Applicable due to Action Requirements

Specification 4.0.4 prohibits entry into an operational mode or other specified condition when Surveillance Requirements have not been performed within the specified surveillance interval. First, a conflict with this T/S exists when a mode change is required as a consequence of shutdown Action Requirements and when the Surveillance Requirements that become applicable have not been performed within the specified surveillance interval. For instance, the plant could previously have been in a mode for which the Surveillance Requirements were not applicable and, therefore, the surveillance may not have been performed within the specified time interval. Consequently, the Action Requirements of the LCO associated with these Surveillance Requirements apply and the unit may have to be placed in a lower mode of operation than that

required by the original shutdown Action Requirements, or other remedial actions may have to be taken, if the surveillance cannot be completed within the time limits for these actions.

The first problem arises because conformance with Specification 4.0.4 would require the performance of these surveillances before entering a mode for which they apply. For example, there are Surveillance Requirements associated with source and intermediate range nuclear instrumentation and cold overpressure protection systems that become applicable as a consequence of mode changes to comply with shutdown Action Requirements. The second problem will be mitigated by the proposed change to T/S 4.0.3, which permits a delay of up to 24 hours in the applicability of the Action Requirements, thereby placing an appropriate time limit on the completion of Surveillance Requirements that become applicable as a consequence of mode changes to comply with Action Requirements. For the first problem, Generic Letter 87-09 suggests adding the following sentence to T/S 4.0.4:

> This provision shall not prevent passage through or to OPERATIONAL MODES as required to comply with ACTION Requirements.

Part 2 - Surveillance Requirements for Exceptions to Specification 4.0.4

An exception to T/S 4.0.4 is generally included in the T/Ss when surveillance requirements can be completed only after entry into a mode or specified condition for which the surveillance requirement applies. For example, T/S 4.0.4 exemptions are included, as applicable, for the power distribution T/S surveillances, since they are generally performed at or near full power. However, upon entry into the mode or specified condition, T/S 4.0.3 requirements may not be met because the Surveillance Requirements may not have been performed within the allowed surveillance interval. Thus, allowance of an exception to T/S 4.0.4 can create a conflict with T/S 4.0.3.

Generic Letter 87-09 stated:

> It is not the intent of Specification 4.0.3 that the Action Requirements should preclude performance of surveillances when an exception to Specification 4.0.4 is allowed.

The Generic Letter contains a recommendation to change the Bases section for T/S 4.0.3 to specify that the 24-hour delay for expired surveillances also applies to surveillances that become applicable when an exception to Specification 4.0.4 is allowed.

We are proposing to deviate from the recommended bases change. At the Cook Nuclear Plant, we strive to perform surveillances which have been delayed, per T/S 4.0.4 exemption, as soon as possible after reaching a plant condition that permits performing the surveillance. Most often, the surveillances are accomplished within 24 hours. However, it is conceivable that delays may occur that would render it impossible to perform the surveillance within 24 hours of entering the applicable mode. As an example, T/S 4.2.5.4 provides a T/S 4.0.4 exemption for primary system flow surveillances. The surveillance, which is normally performed following a refueling outage, is applicable in Mode 1, but can only be performed at or near full power. Following a refueling outage, power ascention is typically limited to 3%/hr. for fuel conditioning. The change from the beginning of Mode 1 (5% power) to 100% power therefore requires over 30 hours to complete. This exceeds the 24-hour time limit allowed by the T/S 4.0.3 Bases.

We have proposed modifications to the Generic Letter 87-09-recommended T/Ss to address this type of problem. First, we have added a sentence to the Generic Letter 87-09 T/S 4.0.3 exempting surveillances delayed per T/S 4.0.4 from the requirements of T/S 4.0.3. We have also modified the statement in the Generic Letter 87-09 T/S 4.0.3 Bases referring to the 24-hour time limit for performing T/S 4.0.4-exempted surveillances. Our modification notes that these surveillances should be performed as expeditiously as possible, but that plant conditions may, at times, cause greater than a 24-hour time period to be required to complete the surveillances.

Description of Changes

In Generic Letter 87-09, new versions of T/Ss 3.0.4, 4.0.3, and 4.0.4 were suggested, as well as changes to expand the Section 3.0/4.0 Bases. We are proposing to modify our T/Ss so they are identical to those suggested in the Generic Letter (with the exception of minor editorial corrections and the exception to T/S 4.0.3 and its Bases Section, previously described). For most of the other T/Ss in the 3.0/4.0 section, we are proposing changes so that our T/Ss are consistent with Rev. 4 of the Standard T/Ss, which is referenced by Generic Letter 87-09. These latter changes are editorial in nature, intended only to achieve consistency with the Standard T/Ss. They do not in any way lessen requirements or change the essence of the T/Ss.

As suggested by the Generic Letter, we are proposing to replace T/S 3.0.4 exemptions that are no longer necessary with the new version of T/S 3.0.4. We are also proposing to add a T/S 3.0.4 exemption to Unit 1 T/S 3.3.3.5 to achieve greater consistency with the Unit 2 T/Ss and the Standard T/Ss. The specific T/S pages involved with adding or deleting T/S 3.0.4 exemptions are listed in the table below.

| Unit | T/S | Page | Description |
|---|---|---|---|
| 1 | Table 3.3-1 | 3/4 3-3, 3-4, 3-5 | T/S 3.0.4 exemptions deleted from Actions 2, 6, and 11. |
| 1 | Table 3.3-3 | 3/4 3-21a | T/S 3.0.4 exemption deleted from Action 19. |
| 1 | 3.3.3.1 | 3/4 3-35, 3-36, 3-36b | T/S 3.0.4 exemption deleted from action statement C and added to Action 20. |
| 1 | 3.3.3.2 | 3/4 3-39 | T/S 3.0.4 exemption deleted. |
| 1 | 3.3.3.3 | 3/4 3-40 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.3.3.4 | 3/4 3-43 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.3.3.5 | 3/4 3-46 | T/S 3.0.4 exemption added to new action statement c. |
| 1 | 3.3.3.7 | 3/4 3-51 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.3.3.9 | 3/4 3-57 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.3.3.10 | 3/4 3-62 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.4.9.3 | 3/4 4-31 | Action statement d deleted. |
| 1 | 3.4.10.1 | 3/4 4-33 | Action statement d deleted. |
| 1 | 3.7.1.1 | 3/4 7-1 | Action statement c deleted. |

| Unit | T/S | Page | Description |
|---|---|---|---|
| 1 | 3.7.1.5 | 3/4 7-10 | Modes 2 and 3 action statement reorganized and T/S 3.0.4 exemption deleted. |
| 1 | 3.7.7.1 | 3/4 7-26 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.7.9.1 | 3/4 7-41 | T/S 3.0.4 exemption deleted from action statement a. |
| 1 | 3.7.9.2 | 3/4 7-44 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.7.9.3 | 3/4 7-47 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.7.9.4 | 3/4 7-49 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.7.9.5 | 3/4 7-50 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.7.10 | 3/4 7-51 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.9.12 | 3/4 9-13 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.1.2 | 3/4 11-4 | T/S 3.0.4 exemption deleted from action statement b. |

| Unit | T/S | Page | Description |
|---|---|---|---|
| 1 | 3.11.1.3 | 3/4 11-5 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.1.4 | 3/4 11-6 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.2.2 | 3/4 11-10 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.2.3 | 3/4 11-11 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.2.4 | 3/4 11-12 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.2.5 | 3/4 11-13 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.11.2.6 | 3/4 11-14 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.11.3 | 3/4 11-15 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.11.4 | 3/4 11-17 | T/S 3.0.4 exemption deleted from action statement b. |
| 1 | 3.12.1 | 3/4 12-2 | T/S 3.0.4 exemption deleted from action statement d. |
| 1 | 3.12.2 | 3/4 12-9 | T/S 3.0.4 exemption deleted from action statement c. |
| 1 | 3.12.3 | 3/4 12-10 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | Table 3.3-1 | 3/4 3-2, 3-3, 3-4 | T/S 3.0.4 exemption deleted from actions 2, 6 and 11. |
| 2 | Table 3.3-3 | 3/4 3-20a | T/S 3.0.4 exemption deleted from Action 19. |
| 2 | 3.3.3.1 | 3/4 3-34, 3-35 3-35b | T/S 3.0.4 exemption deleted from action statement c and added to action 20. |

| Unit | T/S | Page | Description |
|---|---|---|---|
| 2 | 3.3.3.2 | 3/4 3-38 | T/S 3.0.4 exemption deleted. |
| 2 | 3.3.3.3 | 3/4 3-38a | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.3.3.4 | 3/4 3-39 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.3.3.8 | 3/4 3-50 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.3.3.9 | 3/4 3-53 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.3.3.10 | 3/4 3-58 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.4.9.3 | 3/4 4-29 | Action statement d deleted. |
| 2 | 3.4.10.1 | 3/4 4-31 | Action statement d deleted. |
| 2 | 3.7.1.1 | 3/4 7-1 | Action statement c deleted. |
| 2 | 3.7.1.5 | 3/4 7-10 | Modes 2 and 3 action statement reorganized and T/S 3.0.4 exemption deleted. |
| 2 | 3.7.8.1 | 3/4 7-34 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.7.9.1 | 3/4 7-36 | T/S 3.0.4 exemption deleted from action statement a. |
| 2 | 3.7.9.2 | 3/4 7-39 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.7.9.3 | 3/4 7-42 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.7.9.4 | 3/4 7-44 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.7.9.5 | 3/4 7-45 | T/S 3.0.4 exemption deleted from action statement b. |

| Unit | T/S | Page | Description |
|---|---|---|---|
| 2 | 3.7.10 | 3/4 7-46 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.9.12 | 3/4 9-12 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.1.2 | 3/4 11-4 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.1.3 | 3/4 11-5 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.1.4 | 3/4 11-6 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.2.2 | 3/4 11-10 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.2.3 | 3/4 11-11 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.2.4 | 3/4 11-12 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.2.5 | 3/4 11-13 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.11.2.6 | 3/4 11-14 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.11.3 | 3/4 11-15 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.11.4 | 3/4 11-17 | T/S 3.0.4 exemption deleted from action statement b. |
| 2 | 3.12.1 | 3/4 12-2 | T/S 3.0.4 exemption deleted from action statement d. |
| 2 | 3.12.2 | 3/4 12-9 | T/S 3.0.4 exemption deleted from action statement c. |
| 2 | 3.12.3 | 3/4 12-10 | T/S 3.0.4 exemption deleted from action statement b. |

Significant Hazards Considerations

Per 10 CFR 50.92, a proposed amendment will not involve a significant hazards consideration if the proposed amendment does not:

(1) involve a significant increase in the probability or consequences of an accident previously evaluated,

(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.

Criterion 1

Although the proposed changes relax some present T/S requirements, the changes are supported by Generic Letter 87-09 and Rev. 4 of the Standard T/Ss. The addition of a T/S 3.0.4 exemption to Unit 1 T/S 3.3.3.5 is consistent with the Unit 2 T/Ss and the Standard T/Ss, and will correct an oversight in the Unit 1 T/Ss that was corrected in later versions of the Standard T/Ss. It is therefore our belief that any increase in the probability or consequences of a previously evaluated accident, or a reduction in a margin of safety, would not be significant.

Criterion 2

The proposed changes do not involve any physical changes to the plant or any changes to the plant's operating configurations. Additionally, the changes are supported by Generic Letter 87-09 and Rev. 4 to the Standard T/Ss. Thus, we believe that the proposed changes will not create the possibility of a new or different kind of accident from any previously evaluated.

Criterion 3

See Criterion 1, above.

Lastly, we note that the Commission has provided guidance concerning the determination of significant hazards by providing certain examples (48 FR 14870) of amendments considered not likely to involve significant hazards considerations. The sixth of these examples refers to changes which may result in some increase in the probability of occurrence or consequences of a previously

analyzed accident or may reduce in some way a safety margin, but the results of which are clearly within limits established as acceptable. The effect of the proposed T/S changes will be to provide relaxation of some of the T/S requirements found in Sections 3.0 and 4.0 of the T/Ss. The changes, however, are supported by Generic Letter 87-09 and Rev. 4 to the Standard T/Ss. Therefore, we conclude that the example cited is relevant and that the changes should not involve significant hazards consideration.