BORATED WATER SOURCE - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

a. One boric acid makeup tank with a minimum boron concentration of 1720 ppm and a minimum borated water volume of 5150 gallons, or

b. The refueling water storage tanks with:

1. A minimum borated water volume of 5150 gallons above the ECCS suction connection,

2. A minimum boron concentration of 1720 ppm, and

3. A solution temperature between 40°F and 100°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

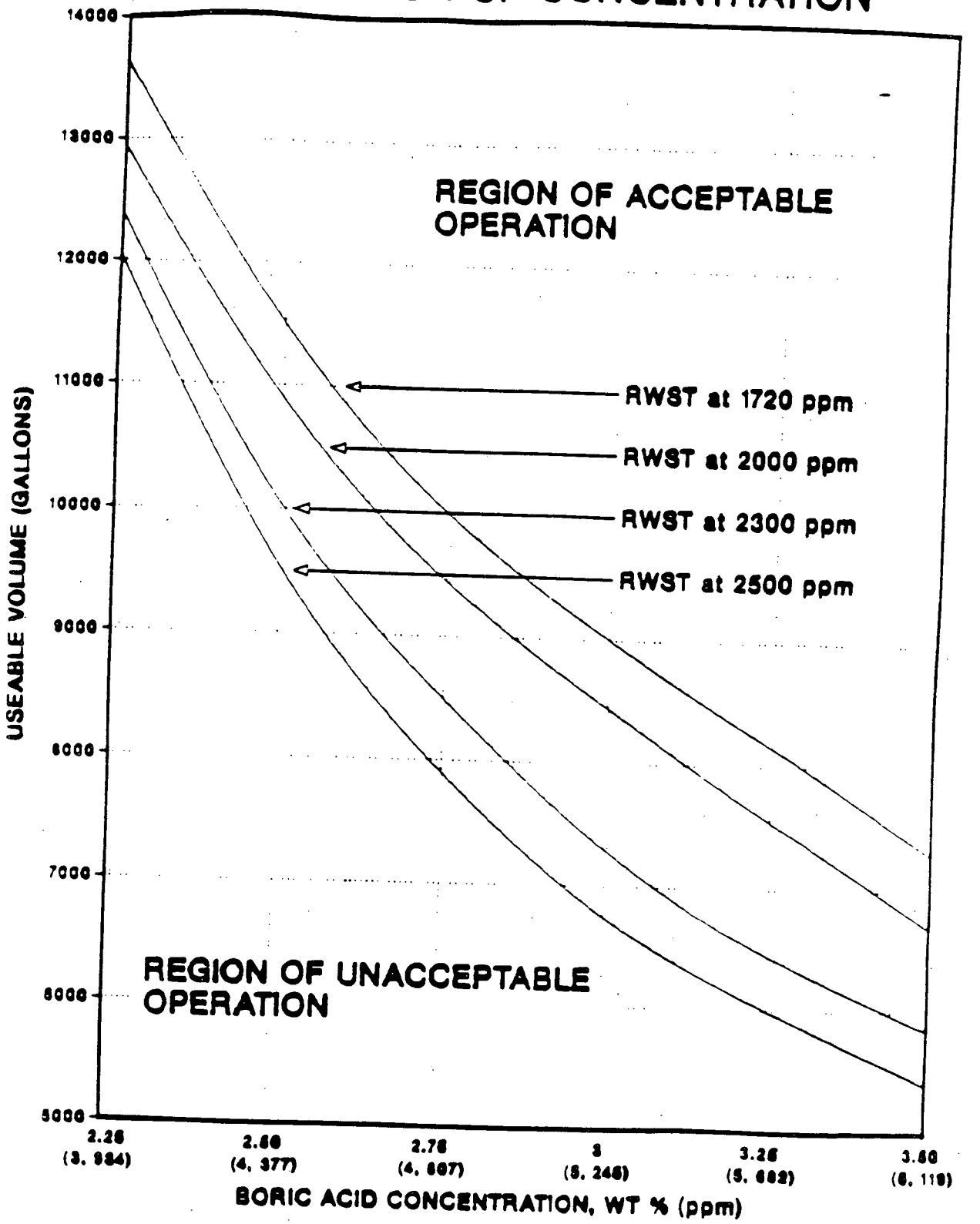
a. At least once per 7 days by:

1. Verifying the boron concentration of the water, and

2. Verifying the contained borated water volume of the tank.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water when the outside air temperature is less than 40°F or greater than 100°F.

REQUIRED STORED BORIC ACID VOLUME AS A FUNCTION OF CONCENTRATION



3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 520°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.

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 makeup pumps, and (5) an emergency power supply from OPERABLE diesel generators.

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 boration capability of either system is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 3.0% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires boric acid solution from the boric acid makeup tanks in the allowable concentrations and volumes of Specification 3.1.2.8 plus approximately 13,300 gallons of 1720 ppm borated water from the refueling water tank or approximately 45,300 gallons of 1720 ppm borated water from the refueling water tank alone. However, for the purpose of consistency the minimum required volume of 362,300 gallons above ECCS suction connection in Specification 3.1.2.8 is identical to more restrictive value of Specification 3.5.4.

With the RCS 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 changes in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing a 3.0% delta k/k SHUTDOWN MARGIN after xenon decay and cooldown from 200°F to 140°F. This condition requires 5150 gallons of 1720 ppm borated water from either the refueling water tank or boric acid solution from the boric acid makeup tank.

ATTACHMENT "B"

PROPOSED SPECIFICATIONS

BORATED WATER SOURCE - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

a. One boric acid makeup tank with a minimum boron concentration of 1720 ppm and a minimum borated water volume of 5150 (7150, Cycle 2) gallons, or

b. The refueling water storage tanks with:

1. A minimum borated water volume of 5150 (7150, Cycle 2) gallons above the ECCS suction connection,

2. A minimum boron concentration of 1720 ppm, and

3. A solution temperature between 40°F and 100°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water sources OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

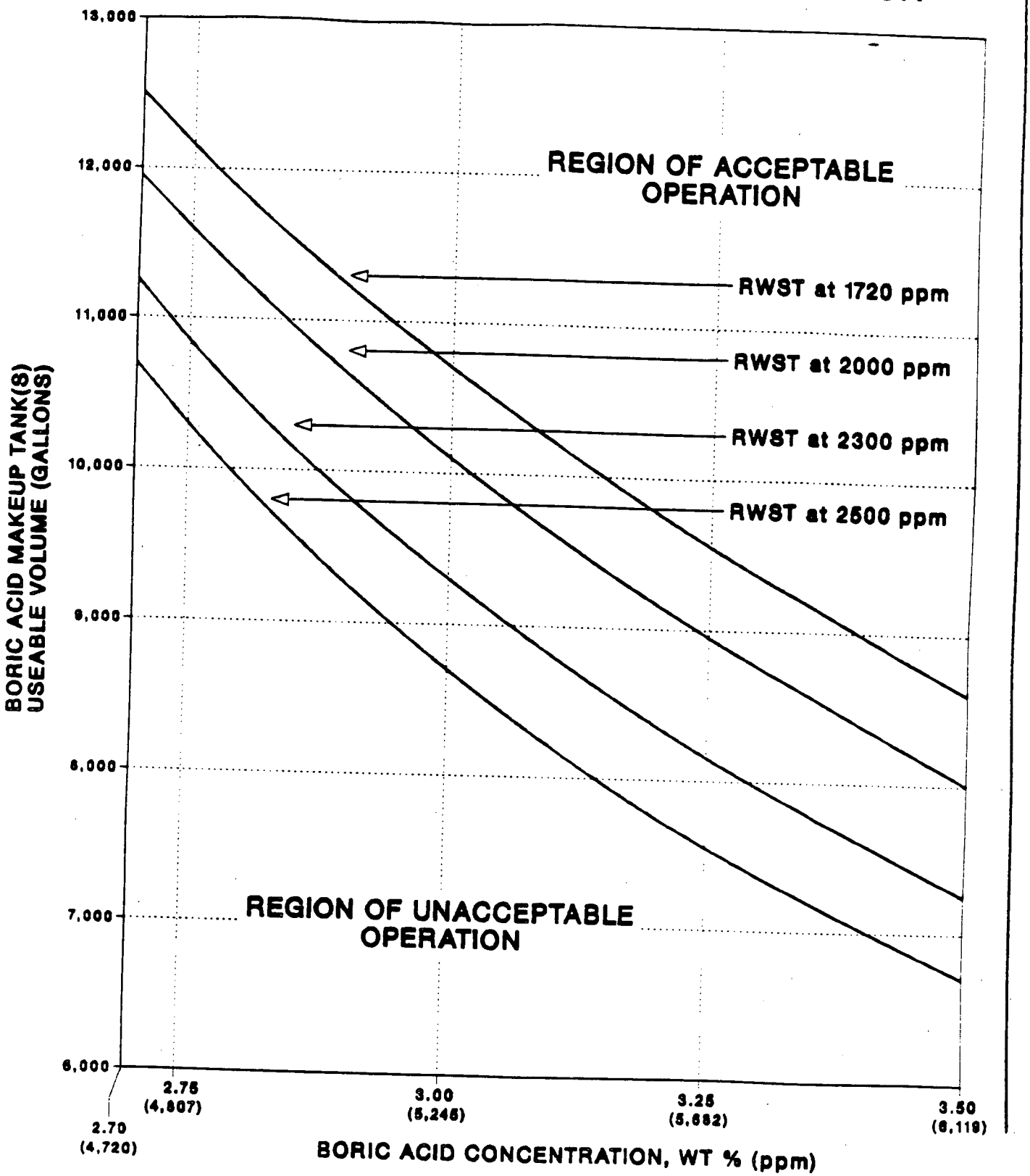
a. At least once per 7 days by:

1. Verifying the boron concentration of the water, and

2. Verifying the contained borated water volume of the tank.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water when the outside air temperature is less than 40°F or greater than 100°F.

REQUIRED STORED BORIC ACID VOLUME AS A FUNCTION OF CONCENTRATION



3/4.1.1.4 MINIMUM TEMPERATURE FOR CRITICALITY

This specification ensures that the reactor will not be made critical with the Reactor Coolant System average temperature less than 520°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.

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 makeup pumps, and (5) an emergency power supply from OPERABLE diesel generators.

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 boration capability of either system is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 3.0% delta k/k after xenon decay and cooldown to 200°F. The maximum expected boration capability requirement occurs at EOL from full power equilibrium xenon conditions and requires boric acid solution from the boric acid makeup tanks in the allowable concentrations and volumes of Specification 3.1.2.8 plus approximately 13,000 (17,000, Cycle 2) gallons of 1720 ppm borated water from the refueling water tank or approximately 45,000 (72,000, Cycle 2) gallons of 1720 ppm borated water from the refueling water tank alone. However, for the purpose of consistency the minimum required volume of 362,800 gallons above ECCS suction connection in Specification 3.1.2.8 is identical to more restrictive value of Specification 3.5.4.

With the RCS 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 changes in the event the single injection system becomes inoperable.

The boron capability required below 200°F is based upon providing a 3.0% delta k/k SHUTDOWN MARGIN after xenon decay and cooldown from 200°F to 140°F. This condition requires 5150 (7,150, Cycle 2) gallons of 1720 ppm borated water from either the refueling water tank or boric acid solution from the boric acid makeup tank.

DESCRIPTION OF PROPOSED CHANGES NPF-10/15-222
AND SAFETY ANALYSIS

This is a request to revise Technical Specification 3/4.9.6, "Refueling Machine."

Existing Technical Specifications

Unit 2: See Attachment A

Unit 3: See Attachment C

Proposed Technical Specifications

Unit 2: See Attachment B

Unit 3: See Attachment D

Description

The proposed change revises Technical Specification 3/4.9.6, "Refueling Machine." Technical Specification 3/4.9.6 requires that the refueling machine be used for movement of Control Element Assemblies (CEAs) or fuel assemblies and be operable within specified weight limits. In addition, it also requires that the refueling machine auxiliary hoist be used for movement of CEAs without fuel assemblies and be operable within a specified overload cut off limit. The proposed change to Technical Specification 3/4.9.6 revises the existing Limiting Conditions for Operation (LCOs) to reflect an increase of 200 pounds to the load limits for the refueling machine only. This is because of the installation of a removable TV camera unit consisting of a stainless steel track in place alongside the refueling machine hoist box. The camera adds 200 pounds to the hoist box and the proposed change will redefine the minimum capacity of the refueling machine from 3000 pounds to 3200 pounds. The overload cut off limit will also be changed to 3550 pounds accordingly instead of 3350 pounds.

Safety Analysis

The proposed change described above shall be deemed to involve a significant hazards consideration if there is a positive finding in any of the following areas:

1. Will operation of the facility in accordance with this proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No

The probability or consequence of an accident is not increased by the proposed change since the addition of a removable TV camera unit to the refueling machine meets all the design criteria for CEA and fuel assembly handling equipment specified in the Final Safety Analysis Report (FSAR) for SONGS Units 2 and 3 and the requirements of NUREG-0612. Thus, this proposed change will not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Will operation of the facility in accordance with this proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The increase in load limits will accommodate the installation of a removable TV camera unit. Since the overload limit is active only when the fuel assembly is enclosed in the hoist box, no fuel damage is credible with respect to the proposed setpoint change. Thus, the operation of the facility in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will operation of the facility in accordance with this proposed amendment involve a significant reduction in a margin of safety?

Response: No

There is no reduction in the margin of safety previously established, since the operation of the refueling machine under the proposed LCOs will not present any increased potential for damage to CEAs or fuel assemblies, nor will it affect the existing safety analyses and design criteria.

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870) of amendments that are considered not likely to involve significant hazards considerations. Example (vi) relates to a change which either may result in some increase to the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptance criteria with respect to the system or component specified in the Standard Review Plan: for example, a change resulting from the application of a refinement of a previously used calculational model or design method. The proposed change is similar to Example (vi) in that the technical specification will increase the minimum and maximum load limits of the refueling machine by 200 pounds to accommodate the installation of a removable TV camera unit.

As discussed in the San Onofre 2 and 3 Final Safety Analysis Report (FSAR), the LCO load limit requirements would interrupt hoisting of a fuel assembly if the load would increase above the overload setpoint or insertion of a fuel assembly when the load would decrease below the underload setpoint. The proposed Technical Specification setpoint increases would reflect only the addition of the actual weight resulting from the installation of a removable TV camera unit. The change would not by any means affect the safety features of the interlock system designed to prevent the fuel handling accident as described in the San Onofre 2 and 3 FSAR. The margin between the actual weight incorporating the removable TV camera unit and the setpoints will remain the same as the existing LCO requirements. These new setpoints would provide the same safety features inherently embodied in the existing ones. In addition, the increase of 200 pounds would not alter the load carrying capacity of the refueling machine. The load on the hoist cable could be monitored constantly at the console to ensure that movement is not being restricted during withdrawal or insertion of a fuel assembly.

The removable TV camera unit is an integral part of the hoist box and is installed in compliance with the seismic design criteria. The replacement of an inoperable camera would not affect fuel handling operations since such replacement is done without the presence of fuel assembly in the hoist box. Hence, there is no credible increase in the probability of fuel damage associated with the operation of the refueling machine incorporating the removable TV camera unit. More important, the removable TV camera unit would comply with the guidelines of NUREG-0612 and would not increase the probability of an accident due to a heavy load drop of 1500 pounds or more. All possible accident scenarios associated with it are bounded by the existing FSAR analyses. Therefore, no additional safety analyses are required and the results will not be affected by the proposed change so as to increase the probability of a previously analyzed accident or to compromise a safety margin. Thus, the proposed change complies with Example (vi) of 48 FR 14870.

Safety and Significant Hazards Determination

Based on the above Safety Analysis, it is concluded that: (1) there is a reasonable assurance that the health and safety of the public will not be endangered by the proposed change; and (2) this action will not result in a condition which significantly alters the impact of the station on the environment as described in the NRC Final Environmental Statement.

SPW:6974F:8645u

ATTACHMENT A

Existing Technical Specifications, Unit 2

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies with or without CEAs and shall be OPERABLE with:

a. A minimum capacity of 3000 pounds, and

b. An overload cut off limit of less than or equal to 3350 pounds.

The refueling machine auxiliary hoist may be used for the movement of CEAs without fuel bundles and shall be OPERABLE with an overload cut off limit of less than or equal to 1000 pounds.

APPLICABILITY: During movement of CEAs and/or fuel assemblies within the reactor pressure vessel utilizing the refueling machine auxiliary hoist or refueling machine.

ACTION: With the requirements for the refueling machine OPERABILITY not satisfied, suspend all refueling machine operations involving the movement of fuel assemblies with or without CEAs within the reactor pressure vessel. With the requirements for the refueling machine auxiliary hoist not satisfied, suspend all refueling machine auxiliary hoist operations involving the movement of CEAs within the reactor pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.6 The refueling machine used for movement of fuel assemblies with or without CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3000 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 3350 pounds. The refueling machine auxiliary hoist used for movement of CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by demonstrating an automatic load cut off when the auxiliary hoist load exceeds 1000 pounds.

ATTACHMENT C

Existing Technical Specifications, Unit 3

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies with or without CEAs and shall be OPERABLE with:

a. A minimum capacity of 3000 pounds, and

b. An overload cut off limit of less than or equal to 3350 pounds.

The refueling machine auxiliary hoist may be used for the movement of CEAs without fuel bundles and shall be OPERABLE with an overload cut off limit of less than or equal to 1000 pounds.

APPLICABILITY: During movement of CEAs and/or fuel assemblies within the reactor pressure vessel utilizing the refueling machine auxiliary hoist or refueling machine.

ACTION: With the requirements for the refueling machine OPERABILITY not satisfied, suspend all refueling machine operations involving the movement of fuel assemblies with or without CEAs within the reactor pressure vessel. With the requirements for the refueling machine auxiliary hoist not satisfied, suspend all refueling machine auxiliary hoist operations involving the movement of CEAs within the reactor pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.6 The refueling machine used for movement of fuel assemblies with or without CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3000 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 3350 pounds. The refueling machine auxiliary hoist used for movement of CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by demonstrating an automatic load cut off when the auxiliary hoist load exceeds 1000 pounds.

ATTACHMENT B

Proposed Technical Specifications, Unit 2

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies with or without CEAs and shall be operable with:

a. A minimum capacity of 3200 pounds, and

b. An overload cut off limit of less than or equal to 3550 pounds.

The refueling machine auxiliary hoist may be used for the move4ment of CEAs without fuel bundels and shall be OPERABLE with an overload cut off limit of less than or equal to 1000 pounds.

APPLICABILITY: During movement of CEAs and/or fuel assemblies within the reactor pressure vessel utilizing the refueling machine auxiliary hoist or refueling machine.

ACTION: With the requirements for the refueling machine OPERABILITY not satisfied, suspend all refueling machine operations involving the movement of fuel assemblies with or without CEAs within the reactor pressure vessel. With the requirements for the refueling machine auxiliary hoist not satisfied, suspend all refueling machine auxiliary hoist operatons involving the movement of CEA's within the reactor pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.6 The refueling machine used for movement of fuel assemblies with or without CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3200 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 3550 pounds. The refueling machine auxiliary hoist used for movement of CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by demonstrating an automatic load cut off when the auxiliary hoist load exceeds 1000 pounds.

ATTACHMENT D

Proposed Technical Specifications, Unit 3

REFUELING OPERATIONS

3/4.9.6 REFUELING MACHINE

LIMITING CONDITION FOR OPERATION

3.9.6 The refueling machine shall be used for movement of fuel assemblies with or without CEAs and shall be operable with:

a. A minimum capacity of 3200 pounds, and

b. An overload cut off limit of less than or equal to 3550 pounds.

The refueling machine auxiliary hoist may be used for the move4ment of CEAs without fuel bundels and shall be OPERABLE with an overload cut off limit of less than or equal to 1000 pounds.

APPLICABILITY: During movement of CEAs and/or fuel assemblies within the reactor pressure vessel utilizing the refueling machine auxiliary hoist or refueling machine.

ACTION: With the requirements for the refueling machine OPERABILITY not satisfied, suspend all refueling machine operations involving the movement of fuel assemblies with or without CEAs within the reactor pressure vessel. With the requirements for the refueling machine auxiliary hoist not satisfied, suspend all refueling machine auxiliary hoist operatons involving the movement of CEA's within the reactor pressure vessel.

SURVEILLANCE REQUIREMENTS

4.9.6 The refueling machine used for movement of fuel assemblies with or without CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by performing a load test of at least 3200 pounds and demonstrating an automatic load cut off when the refueling machine load exceeds 3550 pounds. The refueling machine auxiliary hoist used for movement of CEAs within the reactor pressure vessel shall be demonstrated OPERABLE within 72 hours prior to the start of such operations by demonstrating an automatic load cut off when the auxiliary hoist load exceeds 1000 pounds.