PRIORITY 1
(ACCELERATED RIDS PROCESSING)

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9412080142 DOC.DATE: 94/12/02 NOTARIZED: YES DOCKET #
FACIL:50-305 Kewaunee Nuclear Power Plant, Wisconsin Public Servic 05000305
AUTH.NAME AUTHOR AFFILIATION
STEINHARDT,C.R. Wisconsin Public Service Corp.
RECIP.NAME RECIPIENT AFFILIATION
Document Control Branch (Document Control Desk)

SUBJECT: Proposed Amend 131 to License DPR-43,eliminating requirements from TS 3.2 for charging pumps,high concentration boric acid in bric acid storage tanks,boric acid transfer pumps & boric acid heat tracing.

DISTRIBUTION CODE: A001D COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 20+22
TITLE: OR Submittal: General Distribution

NOTES:

	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME	COPIES LTTR	COPIES ENCL
	PD3-3 LA	1	1	PD3-3 PD	1	1
	LAUFER,R	1	1			
INTERNAL:	ACRS	6	6	FILE CENTER 01	1	1
	NRR/DRCH/HICB	1	1	NRR/DSSA/SCSB	1	1
	NRR/DSSA/SPLB	1	1	NRR/DSSA/SRXB	1	1
	NUDOCS-ABSTRACT	1	1	OGC/HDS2	1	0
EXTERNAL:	NOAC	1	1	NRC PDR	1	1

NOTE TO ALL "RIDS" RECIPIENTS:
PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK, ROOM P1-37 (EXT. 504-2083) TO ELIMINATE YOUR NAME FROM DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTTR 18 ENCL 17

P R I O R I T Y 1 D O C U M E N T

WPSC (414) 433-1598
TELECOPIER (414) 433-5544

NRC-94-121

EASYLINK 62891993

WISCONSIN PUBLIC SERVICE CORPORATION
600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

December 2, 1994

10 CFR 50.90

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Proposed Amendment 131 to the Kewaunee
Nuclear Power Plant Technical Specifications

References: 1) Letter to R. C. Mecredy (RG&E) from A. R. Johnson (USNRC) dated December 7, 1993
2) Letter to Document Control Desk from R.E. Link (WEPCO) dated March 29, 1994

This proposed amendment (PA) to the Kewaunee Nuclear Power Plant (KNPP) Technical Specifications (TS) is being submitted to eliminate the requirements from TS 3.2 for: charging pumps, high concentration boric acid in the boric acid storage tanks (BASTs), the boric acid transfer pumps, and boric acid heat tracing. Changes to TS 3.3 and Table TS 3.5-3 are also being proposed to add requirements associated with the ECCS accumulators, remove the requirements associated with the boric acid storage tanks, and to increase the minimum required boron concentration in the refueling water storage tank (RWST). Lastly, the surveillance requirements involving the BASTs, associated valves and heat tracing located in Table TS 4.1-1, Table TS 4.1-2 and Section 4.5 are eliminated. Supporting analysis for the limiting design basis accident conditions have been performed using the proposed minimum RWST boron concentration of 2400 ppm. This request is similar to a submittal previously approved for the R.E. Ginna Nuclear Power Plant (reference 1) and one that is currently being reviewed by the NRC for the Point Beach Nuclear Power Plant (reference 2).

A001

Wisconsin Public Service Corporation (WPSC) will be extending the fuel cycle from 12 months to 18 months for the KNPP. This longer fuel cycle will be implemented with cycle 21, which is scheduled to start on May 28, 1995. The increased core reactivity required for the longer fuel cycle necessitates an increase in the RWST soluble boron concentration for ensuring post-LOCA subcriticality. Therefore, WPSC respectfully requests this proposed amendment be reviewed and approved prior to April 15, 1995.

Furthermore, it is estimated that this proposed amendment will result in a savings of over $900,000 in maintenance and surveillance costs through the end of the current operating license of the plant. Since these cost savings can be achieved without a reduction in plant safety, we are submitting this proposed amendment as a high priority Cost Beneficial Licensing Action (CBLA).

Attachment 1 to this letter contains a description, a safety evaluation, a significant hazards determination and environmental considerations for the proposed changes. Attachment 2 contains the affected TS pages. Note that previously submitted PA 109A and PA 132 affect TS Section 4.5 and Basis, and finally PA 132 affects Table TS 4.1-1 and Table TS 4.1-2.

In accordance with the requirements of 10 CFR 50.30(b), this submittal has been signed and notarized. A complete copy of this submittal has been transmitted to the State of Wisconsin as required by 10 CFR 50.91(b)(1).

Sincerely,

C. A. Schock for

C. R. Steinhardt
Senior Vice President - Nuclear Power

DJM
Attach.

cc - US NRC - Region III
US NRC Senior Resident Inspector
Mr. Robert Cullen, PSCW

Subscribed and Sworn to
Before Me This 2nd Day
of December 1994

Notary Public, State of Wisconsin

My Commission Expires:

May 19, 1996

ATTACHMENT 1

To

Letter from C. R. Steinhardt (WPSC)

to

Document Control Desk (NRC)

Dated

December 2, 1994

Proposed Amendment 131

Description of Proposed Changes

Safety Evaluation

Significant Hazards Determination

Environmental Considerations

Introduction

The KNPP concentrated boric acid system consists of two boric acid storage tanks (BASTs) each with a capacity of 4000 gallons, and two boric acid transfer pumps along with their associated piping, valves, and heat tracing circuitry. One BAST is normally aligned to the suction of the Safety Injection (SI) pumps. Concentrated boric acid may be injected using the SI pumps or with any one of the three charging pumps through either the emergency, manual, or boric acid blender flow paths. One refueling water storage tank (RWST) filled with not less than 272,500 gallons of borated water is also available as a source of boric acid.

TS 3.2 currently requires 2000 gallons of high concentration boric acid (19,700 to 23,000 ppm) contained in the BASTs to be available for initial safety injection into the reactor coolant system. After injection of the high concentration boric acid, the SI pump suction is automatically shifted to the RWST. Wisconsin Public Service Corporation (WPSC) has performed an analysis which concludes that a 2400 ppm boron concentration in the RWST, without reliance on the inventory contained in the BASTs, provides sufficient margin for the safety injection system to fulfill all safety-related functions. Therefore, it is proposed that the RWST boron concentration be raised from the current 1950 ppm to 2400 ppm, and that reliance on the BASTs for high concentration boric acid be eliminated.

Elimination of the BASTs will allow the SI pumps to take their suction directly from the RWST throughout the injection phase. In order to ensure the BASTs won't be inadvertently filled with RWST water, positive controls will be implemented to isolate the BAST from the RWST. In addition, eliminating the high concentration boric acid in the BASTs will eliminate the necessity of technical specifications regarding the boric acid transfer pumps and boric acid heat tracing. It is estimated that this proposed amendment will result in a savings of over $900,000 in maintenance and surveillance costs through the end of the current operating license of the plant. Since these cost savings can be achieved without a reduction in plant safety, this proposed amendment is being submitted as a Cost Beneficial Licensing Action (CBLA).

The following safety analysis has been separated into two analyses. The first analysis involves the technical specification changes associated with the chemical and volume control system (CVCS) (i.e. charging pumps, BASTs, boric acid transfer pumps, and heat tracing). The second analysis involves the technical specifications associated with the engineered safety systems (i.e. accumulators, SI pumps suction valves and RWST).

PROPOSED CHANGES TO THE CVCS SYSTEM

Description of Proposed Changes to Technical Specification (TS) Sections 3.2 "Chemical and Volume Control System," Table TS 3.5-3 "Emergency Cooling", Table TS 4.1-1 and Table TS 4.1-2 "Minimum Frequencies for Sampling Tests".

1) Changes to TS 3.2, "Chemical and Volume Control System" are proposed to eliminate the requirements for the charging pumps, the high concentration boric acid, the boric acid storage tanks, the boric acid transfer pumps, and boric acid heat tracing.

2) A change to Table TS 3.5-3 "Emergency Cooling" is proposed to eliminate item 2, "Selected Boric Acid Storage Tank Level".

3) Changes to Table TS 4.1-1, "Minimum Frequencies for Checks, Calibrations and Test of Instrument Channels" are proposed to eliminate item 15, "Boric Acid Tank Level", and item 20, "Boric Acid Make-Up Flow Channel."

4) A change to Table TS 4.1-2 "Minimum Frequencies for Sampling Tests" is proposed to eliminate item 4, "Boric Acid Tanks".

5) Lastly, the Basis section for TS 3.2 is revised accordingly and submitted for your information.

Safety Evaluation for Proposed Change to Technical Specification (TS) 3.2 "Chemical and Volume Control System", Table TS 3.5-3 "Emergency Cooling", Table TS 4.I-I, "Minimum Frequencies for Checks, Calibrations and Test of Instrument Channels" and Table TS 4.1-2 "Minimum Frequencies for Sampling Test".

These proposed changes eliminate the technical specifications limiting conditions for operation and surveillance requirements associated with the charging pumps, the high concentration boric acid, the boric acid transfer pumps, the BASTs, and boric acid heat tracing. The BASTs are part of the Chemical and Volume Control System (CVCS) and currently provide the initial source of borated water to the safety injection system.

SAFETY ANALYSIS FOR CHARGING PUMP REMOVAL

The proposed change eliminates the technical specification requirements associated with the charging pumps. This change is consistent with the Westinghouse Technical Specification Criteria Application report submitted to the NRC in reference 2. In this report, the Westinghouse Standard Technical Specifications (STS) were evaluated in accordance with the screening criteria and risk insight guidance provided in reference 1. The NRC provided their

review of this report in reference 3. The MERITS Technical Specifications have been written to conform to the NRC staff positions in reference 3. In April 1989, (reference 4) the NRC accepted the new WOG proposed STS for review. The NRC issued draft NUREG 1431, "Westinghouse Standard Technical Specifications" containing the NRC modified MERITS Technical Specifications and Bases in reference 5. In reviewing NUREG 1431, the staff determined that the specifications for the charging pumps did not meet the criteria for inclusion in the TS. Therefore, KNPP is proposing to delete these specifications. However, WPSC recognizes the importance of the charging pumps to the continued operation of the plant. Therefore it is our intent to continue maintenance on these pumps as we have in the past.

SAFETY ANALYSIS FOR BAST REMOVAL

The effect of eliminating the high concentration boric acid storage tanks on the Updated Safety Analysis Report (USAR) Chapter 14 accident analysis was evaluated. This evaluation determined that the limiting accidents that would need to be re-analyzed included the Loss-of-Coolant Accident (LOCA) events and the Steam Line Break (SLB) event.

Loss-of-Coolant Accident (LOCA) Events

The BASTs are currently the initial source of borated water to the SI system. Changing the initial SI pump suction to the RWST will not adversely affect the Large or Small-Break LOCA analyses because the evaluation models used in analyzing these accidents did not take credit for the high concentration boric acid stored in the BASTs. However, the evaluation for verification of long term post-LOCA reactor core subcriticality did take credit for the BAST boron concentration. Therefore, WPSC performed an analysis of post-LOCA core subcriticality which concluded that the inventory contained in the BASTs would not be required provided the minimum RWST boron concentration was increased to 2400 ppm. The elimination of the BAST inventory for Safety Injection will allow the SI pumps to take their suction directly from the RWST throughout the injection phase. Since the SI pumps will take their initial suction from the RWST, power from safety injection suction valves SI-4A or SI-4B will be removed with the valve in the open position. The specified volume (272,500 gallons of 2400 ppm borated water) in the RWST is adequate to provide sufficient negative reactivity to bring the reactor to the post-LOCA core subcriticality condition. Furthermore, the loss of the BAST water volume (less than 1% of the total available sump water) has a negligible effect on the post LOCA cooling capability of the safety injection system in the recirculation mode.

Steam Line Break Event

Since both the core response and the containment response can be limiting in the SLB event, both were considered in the WPSC Safety Analysis entitled "Main Steam Line Break Safety Analyses for the Removal of the Boric Acid Storage Tank (BAST) from the Safety Injection System". The analysis concluded that a minimum RWST boron concentration of 1950 ppm is

sufficient to provide adequate core protection for the SLB event. The 2400 ppm RWST boron solution proposed by this change will be maintained to address the post-LOCA event and will provide further safety margin for SLB. The analysis addressed the Departure from Nucleate Boiling Ratio (DNBR) issue, and concluded that a minimum DNBR of 1.45 can be maintained throughout the event. This analysis also evaluated the containment response and concluded that the containment pressure and temperature responses were within the acceptable containment design limits. Since the minimum DNBR of 1.45 can be maintained throughout the event, and the containment pressure and temperature remain within the acceptable containment design limits, there is not a significant reduction in the margin of safety for this event.

ADDITIONAL ISSUES

An additional evaluation was performed to determine the impact of using 2400 ppm RWST water rather than 20,000 ppm BAST water on emergency boration using the charging pumps. A reduction in the boron concentration reduces the rate at which negative reactivity can be added to the primary system. The design basis for the emergency boration flow is that it be sufficient to follow the maximum burnout rate of xenon. Calculations have been performed which show that both the normal and emergency boration flow paths (using a charging pump with 2400 ppm RWST water) are capable of meeting this requirement. Since the emergency boration design basis can be met without the need of the BAST, the boric acid transfer pumps are no longer required to be in the TS. Furthermore, eliminating the high concentration boric acid as a safety related requirement removes the need to require a TS for heat tracing.

The USAR (Section 9.2.1) states that boric acid can be injected at a rate which decreases the core reactivity about 4 percent in less than 20 minutes. The 20 minute value is not a design basis requirement, but rather a statement of system capability. There is no requirement on boration time, just a requirement on the rate of negative reactivity addition. The requirement is that the rate of negative reactivity insertion must be greater than the rate at which reactivity is added as a result of xenon decay. This requirement is satisfied with a RWST boron concentration of 2400 ppm and a charging pump flow rate of 60 gpm.

For the above stated reasons, these changes will not adversely affect the health and safety of the public.

SAFETY ANALYSIS FOR REMOVAL OF CVCS/BAST SURVEILLANCE REQUIREMENTS

These proposed changes eliminate the technical specifications surveillance requirements associated with high concentration boric acid, the boric acid transfer pumps, the BASTs, and boric acid heat tracing. Specifically, changes to Table TS 4.1-1, "Minimum Frequencies for Checks, Calibrations and Test of Instrument Channels" are proposed to eliminate item 15, "Boric Acid Tank Level", and item 20, "Boric Acid Make-Up Flow Channel". A change to Table TS

4.1-2 "Minimum Frequencies for Sampling Tests" is proposed to eliminate item 4, "Boric Acid Tanks".

The above described surveillance requirements ensure BAST operability. The BASTs will no longer be relied upon as a source of boron for safety injection, and will serve no safety-related function. Whether the BASTs are operable or not will have no effect on plant safety. Therefore, elimination of the surveillance requirements which insure BAST operability is possible without any adverse effect on the health and safety of the public.

For the above stated reasons, these changes will not adversely affect the health and safety of the public.

Significant Hazards Determination for Proposed Change to Technical Specification (TS) 3.2 and Table TS 3.5-3.

The proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed changes will not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated;

Neither the charging pumps, the high concentration boric acid, the BASTs, the boric acid transfer pumps nor the boric acid heat tracing system are accident initiators. Therefore, a change to these systems will not significantly increase the probability of an accident previously evaluated. The effect of a reduction in initial safety injection boron concentration on the accident analysis was evaluated. The limiting accidents were the Large-Break Loss-of-Coolant Accident (LOCA) and the Steam Line Break (SLB) event. A decrease in the initial safety injection boron concentration from 20,000 ppm to 2400 ppm will not adversely affect the Large or Small-Break Loss-of-Coolant Accident analysis because the evaluation models used in analyzing these accidents do not take credit for the high concentration boric acid stored in the BASTs. However, the evaluation models did take credit for boron in maintaining the long term post LOCA reactor core sub-critical. An analysis was performed which concluded that the inventory contained in the BASTs would not be required provided the minimum RWST boron concentration was increased to 2400 ppm. The SLB event is the other design basis event that could be affected by the proposed elimination of the high boron concentration BASTs as a source of safety injection fluid. Analyses have been performed which conclude that BASTs are not required and that a minimum RWST boron concentration of only 1950 ppm is sufficient to provide adequate protection for the SLB event although 2400 ppm will be maintained to address post-LOCA subcriticality thus providing further safety margin. The results of these analyses indicate that the departure from nucleate boiling (DNB) design basis continues to be met. (A minimum Departure from Nucleate Boiling

Ratio (DNBR) of 1.45 can be maintained throughout the event.) Finally, the containment pressure and temperature remains within the acceptable containment design limits. Since these criteria have been satisfied, there will be no adverse effect on the health and safety of the public and the consequences of any accident previously evaluated have not significantly increased.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated;

Neither the charging pumps, the removal of the BASTs from initial SI pump injection, nor the elimination of both the boric acid transfer pumps and the boric acid heat tracing system as safety-related components would create the possibility of a new or different kind of accident from any accident previously evaluated.

Furthermore, the reactivity control function of the boron in the CVCS and SI systems is not being changed. Therefore, the proposed changes will not adversely affect the health and safety of the public or create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Involve a significant reduction in the margin of safety.

The reduction in the initial concentration of boron injected into the reactor coolant system for accident mitigation has been analyzed. These analyses conclude that all applicable criteria for a LOCA are satisfied. A decrease in the initial safety injection boron concentration from 20,000 ppm to 2400 ppm will not adversely effect the Large-or Small-Break Loss-of-Coolant Accident analysis because the evaluation models used in analyzing these accidents do not take credit for the high concentration boric acid stored in the BASTs. However, in order to maintain the long term post LOCA reactor core sub-critical, a minimum RWST boron concentration of 2400 ppm is required. To meet this requirement, the RWST boron concentration is being raised to 2400 ppm. All criteria of 10 CFR 50.46 can be achieved for both the Large or Small-Break LOCA with no BASTs and 2400 ppm boron in the RWST. Since all criteria of 10 CFR 50.46 are satisfied, there is no adverse effect on the health and safety of the public and there is not a significant reduction in the margin of safety for these casualties.

Since both the core response and the containment response can be limiting in the SLB event, both were considered in the boron concentration reduction analysis. This analysis concludes that a minimum RWST boron concentration of 1950 ppm is sufficient to provide adequate protection for the SLB event, although a 2400 ppm boron solution will be maintained to provide protection for the post LOCA concerns. Since the containment

pressure and temperature remains within the acceptable containment design limits, and a minimum DNBR of 1.45 can be maintained throughout the event, there is not a significant reduction in the margin of safety for this event and therefore there is no adverse effect on the health and safety of the public.

These proposed changes involve the conversion of the TS to Word Perfect format now being used at WPSC. Minor typographical errors and format inconsistencies were corrected. These proposed changes are administrative in nature; accordingly, these proposed changes do not involve a significant hazards consideration.

Additionally, the proposed changes are similar to example C.2.e.(i) in 51 FR 7751. Example C.2.e.(i) states that changes which are purely administrative in nature; i.e., to achieve consistency throughout the Technical Specifications, correct an error, or a change in nomenclature, are not likely to involve a significant hazard.

Significant Hazards Determination for Proposed Changes to Table TS 4.1-1, "Minimum Frequencies for Checks, Calibrations and Test of Instrument Channels" and Table TS 4.1-2 "Minimum Frequencies for Sampling Tests"

The proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed changes will not:

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

2) Create the possibility of a new or different kind of accident from an accident previously evaluated, or

3) Involve a significant reduction in the margin of safety.

The above listed surveillance requirements insure BAST operability. The BASTs will no longer be relied upon as a source of boron for safety injection, and will serve no safety related function. Whether the BASTs are operable or not will have no effect on plant safety. Therefore, elimination of the surveillance requirements which insure BAST operability is possible without any adverse effect on the health and safety of the public and presents no significant hazards.

PROPOSED CHANGES TO THE ENGINEERED SAFETY FEATURES SYSTEM

Description of Proposed Changes to Technical Specification (TS) Section 3.3 "Engineered Safety Features and Auxiliary Systems", and Section 4.5 "Emergency Core Cooling System and Containment Air Cooling System Tests".

1) Changes to TS 3.3, "Engineered Safety Features and Auxiliary Systems" are proposed to:

   A. Add a 72 hour Limiting Condition for Operation (LCO) action statement for TS 3.3.a.2 when the Accumulator boron concentration is less than 1900 ppm. Also a 1 hour LCO action statement is proposed for any other situation rendering the accumulator inoperable.

   B. Renumber TS 3.3.b.1.A regarding the RWST to TS 3.3.b.3 and raise the minimum RWST boron concentration from 1950 ppm to 2400 ppm. Also, an 8 hour LCO action statement is proposed when RWST boron concentration is less than 2400 ppm and a one hour LCO action statement is proposed for any other situation rendering the RWST inoperable.

   C. Change the required valve configuration for safety injection in TS 3.3.b.1.C (new TS 3.3.b.1.B). Since the safety injection pumps' suction will initially be aligned to the RWST, it is proposed to add valves SI-4A or SI-4B to the TS in the open position and remove valve SI-3 from the TS.

   D. Remove the reference to the BASTs in TS 3.3.b.1.B.4. and remove TS 3.3.b.1.D regarding isolation of the BASTs during surveillance testing.

2) Changes to TS 4.5, "Emergency Core Cooling System and Containment Air Cooling System Tests" are proposed to:

   A. Remove the requirement to test the boric acid tank isolation valves to the safety injection pump (TS 4.5.b.2.C).

   B. Remove the requirement to test the closing function of the boric acid tank isolation valves concurrent with the opening of the refueling water storage tank valves (TS 4.5.b.2.E).

3) Lastly, the Basis section for TS 3.3 and TS 4.5 are revised accordingly and submitted for your information.

Safety Evaluation for Proposed Changes to Technical Specification (TS) Section 3.3 "Engineered Safety Features and Auxiliary Systems", and Section 4.5 "Emergency Core Cooling System and Containment Air Cooling System Tests".

These proposed changes raise the RWST boron concentration from 1950 ppm to 2400 ppm, propose LCO action statement's for the accumulators and RWST, and make the appropriate changes (i.e. valve line-ups, and valve testing requirements) to replace the BASTs with the RWST as the primary supply of borated water to the SI pumps.

SAFETY ANALYSIS FOR RWST BORON CONCENTRATION CHANGES AND BAST REMOVAL

As discussed previously, the effect of eliminating the high concentration boric acid storage tanks on the Updated Safety Analysis Report (USAR) Chapter 14 accident analysis was evaluated. This evaluation determined that the limiting accidents that would need to be evaluated included the Loss-of-Coolant Accident (LOCA) events and the Steam Line Break (SLB) event.

Loss-of-Coolant Accident (LOCA) Events

The effect of changing the initial SI pump suction to the RWST will not adversely affect the Large or Small-Break LOCA analyses because the evaluation models used in analyzing these accidents did not take credit for the high concentration boric acid stored in the BASTs. However, the evaluation for verification of long term post-LOCA reactor core subcriticality did take credit for the BAST boron concentration. Therefore, in order to accomplish this function without taking credit for the BASTs, the minimum RWST boron concentration was required to be increased to 2400 ppm. The SI pumps currently take their initial suction from the BASTs with suction valve SI-3 in the open position and power removed. In the proposed configuration, (i.e. eliminating the BASTs), the SI pumps will take their initial suction directly from the RWST though valves SI-4A or SI-4B. In order to ensure that one of the safety injection suction valves SI-4A or SI-4B will be in the open position, power will be removed from one of the valves with the valve in the open position. The specified volume (272,500 gallons of 2400 ppm borated water) in the RWST is adequate to provide sufficient negative reactivity to bring the reactor to the post-LOCA subcritical condition. Furthermore, the loss of the BAST water volume (less than 1% of the total available sump water) has a negligible effect on the post LOCA cooling capability of the safety injection system in the recirculation mode.

Due to the increase in RWST boron concentration, several additional issues were identified that needed to be addressed. The minimum temperature to prevent boron precipitation for 2400 ppm boron was evaluated and determined to be 35°F. Since the RWST temperature and the ambient auxiliary building temperature are always significantly above 40°F, Technical Specifications for heat tracing the RWST and SI piping are not necessary. A 5°F temperature has been added to the 35°F requirement for margin and conservatism.

An additional issue is the containment sump pH post LOCA. An evaluation was performed which determined that the post-LOCA sump pH would change due to the increase in RWST boron concentration and the elimination of the concentrated boric acid from BASTs. This evaluation concluded that the resultant sump recirculation liquid pH would be maintained above 7.0 in accordance with the KNPP USAR design criteria.

Steam Line Break Event

Since both the core response and the containment response can be limiting in the SLB event, both were considered in the "Main Steam Line Break Safety Analyses for the Removal of the Boric Acid Storage Tank (BAST) from the Safety Injection System". The analysis concluded that although a minimum RWST boron concentration of 1950 ppm is sufficient to provide adequate core protection for the SLB event, a 2400 ppm boron solution will be maintained to address the post LOCA event. This analysis also evaluated the containment response and concluded that the containment pressure and temperature responses were within the acceptable containment design limits. Since the minimum Departure from Nucleate Boiling Ratio (DNBR) of 1.45 can be maintained throughout the event, and the containment pressure and temperature remains within the acceptable containment design limits, there is not a significant reduction in the margin of safety for this event.

SAFETY ANALYSIS FOR ACCUMULATOR AND RWST LCOs

In accordance with NUREG 1431 Rev 0 entitled "Westinghouse Standard Technical Specifications", the following LCOs are being proposed for the accumulators and the RWST. The accumulators supply water to the reactor vessel during the blowdown phase of a loss of coolant accident, and provide inventory to help accomplish the refill phase that follows thereafter.

The RWST ensures that an adequate supply of borated water is available to cool and depressurize the containment in the event of a Design Basis Accident (DBA), to cool and cover the core in the event of a LOCA, to maintain the reactor subcritical following a DBA, and to ensure adequate level in the containment sump to support ECCS and Containment Spray System pump operation in the recirculation mode.

Accumulator Boron Concentration LCO

With the accumulator boron concentration not within limits, it must be returned to within limits within 72 hours. The 72 hour LCO action statement is reasonable since one accumulator below the minimum boron concentration limit will have no effect on available ECCS water and an insignificant effect on core subcriticality during reflood.

Additional Accumulator LCOs

With the accumulator inoperable for other reasons, it must be restored to operable status within 1 hour. In this condition, the minimum requirement (contents of one accumulator) cannot be assumed to reach the core during a LOCA. Due to the severity of the consequences should a LOCA occur in these conditions, the 1 hour Completion Time to open the valve, remove power to the valve, or restore the proper water volume or nitrogen cover pressure ensures that prompt action will be taken to return the inoperable accumulator to OPERABLE status. The Completion Time minimizes the potential for exposure of the plant to a LOCA under these conditions. If the accumulator cannot be returned to an operable status within 1 hour, then within 1 additional hour action shall be initiated to achieve hot standby within the next 6 hours, achieve hot shutdown within the following 6 hours, and achieve cold shutdown within an additional 36 hours.

RWST Boron Concentration LCO

With RWST boron concentration not within limits, it must be returned to within limits within 8 hours. The 8 hour LCO action statement regarding RWST boron concentration is a reasonable amount of time for operators to complete actions to restore boron concentration to within limits considering the potential ramifications of this situation. Under these conditions neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE condition. The 8 hour limit to restore the RWST boron concentration to within limits was developed considering the time required to change the boron concentration, the fact that the contents of the tank are still available for injection, and the low probability of an accident requiring the use of 2400 ppm boron. If boron concentration cannot be returned to specification within 8 hours, then within 1 hour action shall be initiated to achieve hot standby within the next 6 hours, achieve hot shutdown within the following 6 hours, and achieve cold shutdown within an additional 36 hours.

Additional RWST LCOs

With the RWST inoperable for other reasons, it must be restored to operable status within 1 hour. The 1 hour LCO action statement regarding an inoperable RWST for reasons other than boron concentration is a reasonable amount of time for operators to complete the required actions considering the potential ramifications of this situation. Again, in this condition, neither the ECCS nor the Containment Spray System can perform its design function. Therefore, prompt action must be taken to restore the tank to OPERABLE status or to place the plant in a mode in which the RWST is not required. The short time of 1 hour to restore the RWST to operable status is based on this condition simultaneously affecting redundant trains. If the RWST cannot be returned to an operable status within 1 hour, then within 1 additional hour action shall be initiated to achieve hot standby within the next 6 hours, achieve hot shutdown within the following 6 hours, and achieve cold shutdown within an additional 36 hours.

SAFETY ANALYSIS FOR REMOVAL OF SI/BAST SURVEILLANCE REQUIREMENTS

These proposed changes eliminate the technical specifications surveillance requirements associated with high concentration boric acid (BASTs) to the suction of the SI pumps. Specifically, the elimination of TS 4.5.b.2.C and TS 4.5.b.2.E (which requires testing the BAST isolation valves to the SI pump) are proposed since the SI pumps will no longer be taking a suction from the BAST.

The above listed surveillance requirements ensure BAST operability. The BASTs will no longer be relied upon as a source of boron for safety injection, and will serve no safety related function. Whether the BASTs are operable or not will have no affect on plant safety. Therefore, elimination of the surveillance requirements which insure BAST operability is possible without any adverse effect on the health and safety of the public.

For the above stated reasons, these changes will not adversely affect the health and safety of the public.

Significant Hazards Determination for Proposed Changes to Technical Specification TS 3.3 and Section 4.5.

The proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed changes will not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

   Neither the RWST, the boron solution contained within the RWST nor valves SI-3, SI-4A/B are accident initiators. Therefore, a change to these systems will not significantly increase the probability of an accident previously evaluated. The effect of a reduction in initial Safety Injection boron concentration on the accident analysis was evaluated. The limiting accidents were the Large-Break Loss-of-Coolant Accident (LOCA) and the Steam Line Break (SLB) event. A decrease in the initial safety injection boron concentration from 20,000 ppm to 2400 ppm will not adversely effect the Large or Small-Break Loss-of-Coolant Accident analysis because the evaluation models used in analyzing these accidents do not take credit for the high concentration boric acid stored in the BASTs. However, the evaluation models did take credit for boron in maintaining the long term post LOCA reactor core sub-critical. An analysis was performed which concluded that the BASTs could be eliminated provided the minimum RWST boron concentration was increased to 2400 ppm. The SLB event is the other design basis event that could be affected by the proposed elimination of the high concentration BASTs as a safety-related source for reactivity control injection fluid. However, analyses have been performed which conclude that a minimum RWST boron concentration of only 1950

ppm is sufficient to provide adequate protection for the SLB event although 2400 ppm will be maintained to address post-LOCA subcriticality thus providing further safety margin. The results of these analyses indicate that the departure from nucleate boiling (DNB) design basis continues to be met. (A minimum Departure from Nucleate Boiling Ratio (DNBR) of 1.45 can be maintained throughout the event.) Furthermore, maintaining the suction of the SI pumps to the RWST with valves SI-4A or SI-4B open with power removed places the system in a normal SI sequence and eliminates the requirement to switch suction from the BASTs to the RWST. This eliminates a potential failure mechanism and increases the overall reliability of the ECCS system. Finally, the containment pressure and temperature remains within the acceptable containment design limits.

Since these criteria have been satisfied, there will be no adverse effect on the health and safety of the public and the consequences of any accident previously evaluated have not significantly increased.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

This change to the Technical Specifications allows use of 2400 ppm boron for safety injection. SI pump suction would be directly from the RWST. This eliminates the necessity of shifting suction from the BASTs to the RWST, reducing the complexity of the operation. Since the pumps remain connected to the RWST throughout the injection phase, there is no possibility of a new or different kind of accident from any accident previously evaluated.

Neither the reduction in initial boron concentration for safety injection, nor the increase in the boron concentration in the RWST would create the possibility of a new or different kind of accident from any accident previously evaluated.

Lastly, the reactivity control function of the boron in the CVCS and SI systems is not being changed. Therefore, the proposed changes will not adversely affect the health and safety of the public or create the possibility of a new or different kind of accident from any accident previously evaluated.

3) Involve a significant reduction in the margin of safety.

The change in the concentration of boron injected into the primary system for accident mitigation has been analyzed. These analyses conclude that all applicable criteria for a LOCA are satisfied. A change in safety injection boron concentration to 2400 ppm will not adversely affect the Large or Small-Break LOCA analysis because the evaluation model codes used in analyzing these accidents did not take credit for boron. However,

a minimum RWST boron concentration of 2400 ppm is required to maintain long term post LOCA reactor core sub-criticality. To meet this requirement, the RWST minimum boron concentration is being raised to 2400 ppm. All criteria of 10 CFR 50.46 can be achieved for both the Large or Small-Break LOCA with 2400 ppm boron in the RWST. Since all criteria of 10 CFR 50.46 are satisfied, there is no adverse effect on the health and safety of the public and there is not a significant reduction in the margin of safety for these casualties.

Since both the core response and the containment response can be limiting in the SLB event, both were considered in the boron concentration reduction analysis. Although a minimum RWST boron concentration of 1950 ppm is sufficient to provide adequate protection for the SLB event, a 2400 ppm boron solution will be maintained to provide protection for the post large break LOCA concerns. Since the containment pressure remains below the design pressure, and a minimum DNBR of 1.45 can be maintained throughout the event, there is not a significant reduction in the margin of safety for this event.

These proposed changes involve the conversion of the TS to Word Perfect format now being used at WPSC. Minor typographical errors and format inconsistencies were corrected. These proposed changes are administrative in nature; accordingly, these proposed changes do not involve a significant hazards consideration.

Additionally, the proposed changes are similar to example C.2.e.(i) in 51 FR 7751. Example C.2.e.(i) states that changes which are purely administrative in nature; i.e., to achieve consistency throughout the Technical Specifications, correct an error, or a change in nomenclature, are not likely to involve a significant hazard.

Significant Hazards Determination for Proposed Changes to Technical Specification (TS) Section 4.5 "Emergency Core Cooling System and Containment Air Cooling System Tests".

These proposed changes were reviewed in accordance with the provisions of 10 CFR 50.92 to show no significant hazards exist. The proposed changes will not:

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

2) Create the possibility of a new or different kind of accident from an accident previously evaluated, or

3) Involve a significant reduction in the margin of safety.

The above listed surveillance requirements insure BAST operability. The BASTs will no longer

be relied upon as a source of boron for safety injection, and will serve no safety related function. Whether the BASTs are operable or not will have no effect on plant safety. Therefore, elimination of the surveillance requirements which insure BAST operability is possible without any adverse effect on the health and safety of the public and presents no significant hazards.

Environmental Considerations

This proposed amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area, as defined in 10 CFR 20, or a change to a surveillance requirement. WPSC has determined that the proposed amendment involves no significant hazards considerations and no significant change in the types of any effluent that may be released offsite and that there is no significant increase in the individual or cumulative occupational radiation exposure. Accordingly, this proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with this proposed amendment.

REFERENCES

1) 52FR3788, "Interim Policy Statement of Technical Specification Improvements for Nuclear Power Reactors," United States Nuclear Regulatory Commission, February 6, 1987

2) Andrachek, J. D., Bencini, R.L., et. al., Methodically Engineered, Restructured and Improved Technical Specifications, MERITS Program - Phase II Task 5, Criteria Application, WCAP-11618, November 1987.

3) T.E. Murley to W. S. Wilgus, "NRC Staff Review of Nuclear Steam Supply System Vendor Owners Group's Application of the Commission's Interim Policy Statement Criteria to Standard Technical Specifications," May 9, 1988. (NRC letter).

4) Charles E. Rossi to R.A. Newton, (letter accepting the WOG proposed new STS), April 28, 1989

5) William T. Russell to Thomas E. Tipton, "New Standard Technical Specifications (STS), Final Draft," January 29, 1991.