10 CFR 50.90
10 CFR 50.91(a)(5)

Progress Energy

Serial: RNP-RA/10-0028

MAR 23 2010

United States Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23

SUPPLEMENT TO REQUEST FOR
EMERGENCY TECHNICAL SPECIFICATIONS CHANGE
TO SECTION 3.4.17, CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS)

Ladies and Gentlemen:

By letter dated March 22, 2010, and in accordance with the provisions of the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), submitted a request for an amendment to the Technical Specifications (TS) contained in Appendix A of the Operating License for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The proposed amendment will revise TS 3.4.17, "Chemical and Volume Control System (CVCS)." The proposed change to TS 3.4.17 is related to the Required Actions and Completion Times associated with the loss of makeup water pathways from the Refueling Water Storage Tank (RWST) for Reactor Coolant Pump seal injection.

The proposed changes are hereby being revised to remove the proposed change to the required action and completion time associated with Condition F for both makeup pathways from the RWST inoperable.

Attachment I provides an Affirmation as required by 10 CFR 50.30(b).

Attachment II provides a description of the current condition, a description and justification of the proposed change, justification for an emergency amendment, a No Significant Hazards Consideration Determination, and an Environmental Impact Consideration, as modified for this revision to the proposed Technical Specifications change.

Attachment III provides a markup of the affected TS page. Attachment IV provides the retyped TS page.

Progress Energy Carolinas, Inc.
Robinson Nuclear Plant
3581 West Entrance Road
Hartsville, SC 29550

A001
NRR

Upon implementation of the Technical Specifications amendment, a corresponding revision to the TS Bases for Section 3.4.17 will be issued. The section of the current TS Bases to be revised reads:

> ACTION B.1
>
> With one Makeup Water Pathway inoperable, the inoperable components must be returned to OPERABLE status within 24 hours. The 24 hour Completion Time is consistent with the time permitted to restore an inoperable charging pump to OPERABLE status. Because there are two means of establishing Makeup Water Pathways, the remaining OPERABLE pathway will provide the required source of makeup water.

The currently planned TS Bases revision is provided, as follows:

> ACTION B.1
>
> With one Makeup Water Pathway inoperable, the inoperable components must be returned to OPERABLE status within 72 hours. The 72 hour Completion Time is based on the reliability of the second Makeup Water Pathway and the availability of other makeup water sources, and provides a reasonable time for repair of the inoperable components.

In accordance with 10 CFR 50.91(b), Progress Energy Carolinas, Inc., is providing the State of South Carolina with a copy of this license amendment request.

Nuclear Regulatory Commission approval of the proposed license amendment is requested on an emergency basis to allow for a timely repair of a leak in the CVCS piping.

If you have any questions concerning this matter, please contact me at (843) 857-1253.

Sincerely,

Benjamin C. White
Manager – Support Services – Nuclear

Attachments:

I. Affirmation
II. Supplement to the Request for Emergency Technical Specifications Changes Related to Section 3.4.17, "Chemical and Volume Control System (CVCS)"
III. Markup of Technical Specifications Page
IV. Retyped Technical Specifications Page

BCW/cac

c: Ms. S. E. Jenkins, Manager, Infectious and Radioactive Waste Management Section (SC)
Mr. A. Gantt, Chief, Bureau of Radiological Health (SC)
Mr. L. A. Reyes, NRC, Region II
Mr. T. Orf, NRC Project Manager, NRR
NRC Resident Inspector, HBRSEP
Attorney General (SC)

AFFIRMATION

The information contained in letter RNP-RA/10-0028 is true and correct to the best of my information, knowledge, and belief; and the sources of my information are officers, employees, contractors, and agents of Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. I declare under penalty of perjury that the foregoing is true and correct.

Executed On: 3/23/2010

Benjamin C. White
Manager – Support Services – Nuclear
HBRSEP, Unit No. 2

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

SUPPLEMENT TO THE REQUEST FOR EMERGENCY TECHNICAL SPECIFICATIONS CHANGE RELATED TO SECTION 3.4.17, "CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS)"

By letter dated March 22, 2010, and in accordance with the provisions of the Code of Federal Regulations, Title 10, Part 50.90, Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), submitted a request for an amendment to the Technical Specifications (TS) contained in Appendix A of the Operating License for H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2.

The proposed amendment will revise TS 3.4.17, "Chemical and Volume Control System (CVCS)." The proposed change to TS 3.4.17 is related to the Required Actions and Completion Times associated with the loss of makeup water pathways from the Refueling Water Storage Tank (RWST) for Reactor Coolant Pump seal injection.

The proposed changes are hereby being revised to remove the proposed change to the required actions and completion times associated with Condition F for both makeup pathways from the RWST inoperable.

Description of Current Condition

Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.4.17, "Chemical and Volume Control System (CVCS)," provides the operability requirements, allowed conditions, required actions, completion times, and surveillance requirements for the function of the CVCS to supply Reactor Coolant Pump (RCP) seal injection flow. The LCO includes a requirement for the operability of two makeup water pathways from the Refueling Water Storage Tank (RWST). Condition B addresses the condition of one of the two makeup water pathways from the RWST inoperable. For this condition the required action states that the inoperable pathway must be restored to operable status within 24 hours, otherwise a plant shutdown would be required in accordance with Condition C.

Description and Justification of the Proposed Change

The proposed change to TS 3.4.17 revises the actions required for Condition B. The Completion Time for Condition B will be changed from 24 hours to 72 hours.

The proposed completion time is justified based on the low safety significance of the loss of one of these specific makeup water pathways. The normal water supply to the charging pumps that provide RCP seal injection flow comes from the Volume Control Tank (VCT). The VCT is normally replenished by the primary water storage tank, in combination with boric acid storage tanks, for makeup and RCS boron concentration adjustments. The pathways from the RWST are not normally used to supply seal injection during operation and provide the back-up source of fluid if the normal sources become unavailable. In addition to the two makeup water pathways from the

RWST that are addressed by TS 3.4.17, and the normal source from the VCT, fluid for seal injection via the charging pumps can be supplied from both normal and emergency boration paths.

If RCP seal injection flow is not within limit, then Condition D or E (depending on charging pump availability) would be entered. The TS required actions for Conditions D and E require a plant shutdown unless immediate actions can be taken to restore adequate seal injection flow. Inoperability of one pathway from the RWST requires entry into Condition B, without entry into Condition D or E. In this situation RCP seal injection would remain available and within limit because only one of the two pathways associated with the backup source, which is the RWST, would be inoperable. Therefore, the safety significance of the loss of one of the RWST makeup flow paths is very low because loss of one pathway does not cause RCP seal injection flow to be below the limit. Additionally, one pathway from the RWST remains operable when a single pathway from the RWST is inoperable. The completion time of 24 hours is considered to be overly restrictive for this condition because one pathway would be operable and the required safety function can be met with the one operable pathway, only the redundancy of the pathways would be impacted.

An evaluation of the risk impacts using the current HBRSEP, Unit No. 2, Probabilistic Safety Assessment (PSA) model were conducted to provide additional information about the effects of this change. This evaluation shows an increase in Core Damage Frequency (CDF) of less than 5E-08 and an increase in Large Early Release Fraction (LERF) of less than 1E-09 for having one makeup path unavailable for 72 hours. These calculated increases in CDF and LERF are considered negligible.

The requirements of LCO 3.4.17 were established during the conversion to Standard Technical Specifications, which was approved by NRC letter dated October 24, 1997. LCO 3.4.17 as approved for HBRSEP, Unit No. 2, is not a prescribed LCO of the Standard Technical Specifications as provided in NUREG-1431, "Standard Technical Specifications – Westinghouse Plants." As stated in the basis for LCO 3.4.17, this specification for HBRSEP, Unit No. 2, was established based on information associated with the Individual Plant Examination (IPE) that showed a high risk significance of the RCP seal injection function. Although, based on review of information documenting the basis for the creation of LCO 3.4.17, risk methods were not used to establish the completion times for the actions associated with the loss of the RWST pathways. The inclusion of Technical Specifications conditions for the inoperability of the RWST pathways was considered a less restrictive change to the Technical Specifications at the time of conversion because it established these pathways as the required sources, rather than maintaining the existing Technical Specifications requirements for the boric acid transfer pumps. The requirements for the boric acid transfer pumps were removed from the Technical Specifications during conversion and relocated to the Technical Requirements Manual.

The Technical Specifications requirements associated with the CVCS system at the time of conversion to Standard Technical Specifications were intended to ensure reactor coolant system boron inventory. The conversion of the existing Technical Specifications requirements to establish requirements for RCP seal injection appears to have inappropriately established the 24 hour completion time for one RWST pathway. This occurred because continuity of the RCP seal injection function was inappropriately related to the requirements for the CVCS system at that time,

which utilized a 24 hour completion time for loss of one of two boric acid transfer pumps. This was apparently judged as equivalent, so 24 hours was established for the inoperability of one RWST pathway. As previously stated, the Technical Specifications requirements for HBRSEP, Unit No. 2, at the time of conversion were intended to ensure reactor coolant system boron inventory, not RCP seal injection flow. Additionally, required actions and completion times associated with the loss of RCP seal injection flow establish that action must be initiated immediately to restore RCP seal injection flow. The loss of a single RWST pathway does not render the capability to supply flow from this source inoperable and the loss of one or both RWST pathways does not result in a loss of RCP seal injection flow.

Based on the loss of single RWST pathway being only a loss of redundancy for this function, it is justifiable that substantially longer than 24 hours should be allowed. For example, a loss of redundancy in the emergency core cooling system is a 72 hour completion time. Therefore, a 72 hour completion time is proposed for the loss of redundancy of the pathways from the RWST.

Based on the preceding justification, the proposed change increases the allowed completion time for inoperability of one pathway from 24 hours to 72 hours before initiation of a shutdown would be required. The 72 hours would be expected to allow for sufficient time for the currently planned repairs to be completed.

Justification for Emergency Approval

The need for the emergency approval of the proposed amendment results from the unexpected development of a leak in one of the makeup flow paths from the RWST. On March 16, 2010, a leak via a through-wall defect in a connection between the four-inch makeup flow piping to a three-quarter inch drain line was discovered after noting a decreasing trend in volume control tank (VCT) level. The leak rate was within allowable limits and a structural analysis of the measured defect determined that structural integrity was maintained. At approximately 08:10 hours on March 18, 2010, it was noted that the leak rate had increased and the flaw length had increased. The flaw length was approaching a value that would require declaring the piping inoperable, and hence would require entry into TS 3.4.17, Condition B. The visible surface flaw indication was initially measured at about 1.25 inches on March 16, 2010. The flaw size was estimated to be about 1.625 inches on March 18, 2010, with a calculated operability limit of 1.79 inches.

A temporary modification consisting of a mechanical brace was designed to limit propagation of the crack by reducing vibration of the drain line. The mechanical brace was installed at approximately 13:30 hours on March 18, 2010, to stop or slow the progression of the flaw. Given the high likelihood that that the flaw could further degrade and exceed operability criteria, repair options for the leak are being planned. The repair options require the removal of one RWST pathway from service by use of one or more freeze seals in this line. In this condition with the line isolated, entry into TS 3.4.17, Condition B, is required. The repair options have a high likelihood of exceeding the current TS 3.4.17 Required Action B.1 completion time of 24 hours. Therefore, the current TS would likely result in the need for a plant shutdown during the repair of this piping. It is expected that the requested 72 hour completion time would allow sufficient time for repairs without the need for a plant shutdown.

Therefore, the proposed change is necessary to allow repair to this unexpected condition by minimizing the likelihood of plant shutdown transient while the repair is conducted. Further, the proposed change is requested as permanent because the justification and bases for this change are valid and remain applicable to this LCO beyond the specific circumstances that have prompted the need for this change. This situation could not be avoided due to the unforeseen circumstance of a through-wall crack at this location.

No Significant Hazards Consideration Determination

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), is proposing a change to Appendix A, Technical Specifications, of Facility Operating License No. DPR-23, for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed change to TS Section 3.4.17 revises the actions required for Condition B. The Completion Time for Condition B will be changed from 24 hours to 72 hours.

An evaluation of the proposed change has been performed in accordance with 10 CFR 50.91(a)(1) regarding no significant hazards considerations, using the standards in 10 CFR 50.92(c). A discussion of these standards as they relate to this amendment request follows:

1. The Proposed Change Does Not Involve a Significant Increase in the Probability or Consequences of an Accident Previously Evaluated.

   The proposed change provides revised requirements for the completion time of the action required when one makeup water flow path from the RWST to the charging pumps for RCP seal injection is inoperable. The revised requirements are appropriate because other conditions in this same LCO (Conditions D and E) already provide requirements for immediate action to restore RCP seal injection flow if it is not within the required limit. The increase in completion time from 24 to 72 hours for the condition with one RWST pathway inoperable is consistent with other similar restrictions applied to a loss of redundancy. Therefore the proposed change has minimal impact on the probability of accidents that may occur as a result of the loss of RCP seal cooling. Based on the Updated Final Safety Analysis Report descriptions for the CVCS system, the makeup water flow paths are not required for accident consequence mitigation and hence there is no impact on the consequences of analyzed accidents.

   Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. The Proposed Change Does Not Create the Possibility of a New or Different Kind of Accident From Any Previously Evaluated.

   The proposed change provides revised requirements for the completion time of the action required when one makeup water flow path from the RWST to the charging pumps for RCP seal injection is inoperable. The TS Section 3.4.17 LCO requirements are intended to provide appropriate requirements and limitations to reduce the likelihood of a loss of coolant

accident that could be caused a loss of RCP seal cooling. The proposed TS Section 3.4.17 requirements will continue to maintain appropriate requirements and limitations for the CVCS. The proposed changes to the completion time limits for TS LCO 3.4.17 do not affect the manner that this equipment performs such that a new or different type of failure mode or accident would be created. Additionally, no new accident initiators, precursors, or sequences are introduced by the proposed change because only the time limits associated with currently postulated conditions are being changed.

Therefore, operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any previously evaluated.

3. The Proposed Change Does Not Involve a Significant Reduction in the Margin of Safety.

The proposed change provides revised requirements for the completion time of the action required when one makeup water flow path from the RWST to the charging pumps for RCP seal injection is inoperable. There is no specifically identified margin of safety associated with this function and the time limits established for completing required actions in LCO 3.4.17. Increasing the completion time limits associated with inoperability of one RWST flow path does not result in a change that would impact the progression of an accident or malfunction as described in the Updated Final Safety Analysis Report. The requirements of LCO 3.4.17 are intended to maintain the RCP seal cooling function and provide appropriate limitations on reactor operation if the requirements are not met. The proposed changes for LCO 3.4.17 will continue to maintain appropriate requirements for this function. The proposed changes to LCO 3.4.17 do not impact the other TS requirements that provide appropriate limitations on the systems that would protect the margin of safety in the unlikely condition that RCP seal cooling cannot be maintained within limits.

Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant reduction in the margin of safety.

Based on the above discussion, Carolina Power and Light Company has determined that the requested change does not involve a significant hazards consideration.

Environmental Impact Consideration

10 CFR 51.22(c)(9) provides criteria for identification of licensing and regulatory actions for categorical exclusion from performing an environmental assessment. A proposed change for an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed change would not (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite; (3) result in a significant increase in individual or cumulative occupational radiation exposure. Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc., has reviewed this request and determined the proposed change 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 needs to be

prepared in connection with the issuance of the amendment. The basis for this determination follows.

Proposed Change

Carolina Power and Light Company, also known as Progress Energy Carolinas, Inc. (PEC), is proposing a change to Appendix A, Technical Specifications, of Facility Operating License No. DPR-23, for the H. B. Robinson Steam Electric Plant (HBRSEP), Unit No. 2. The proposed change to TS Section 3.4.17 revises the actions required for Condition B. The Completion Time for Condition B will be changed from 24 hours to 72 hours.

Basis

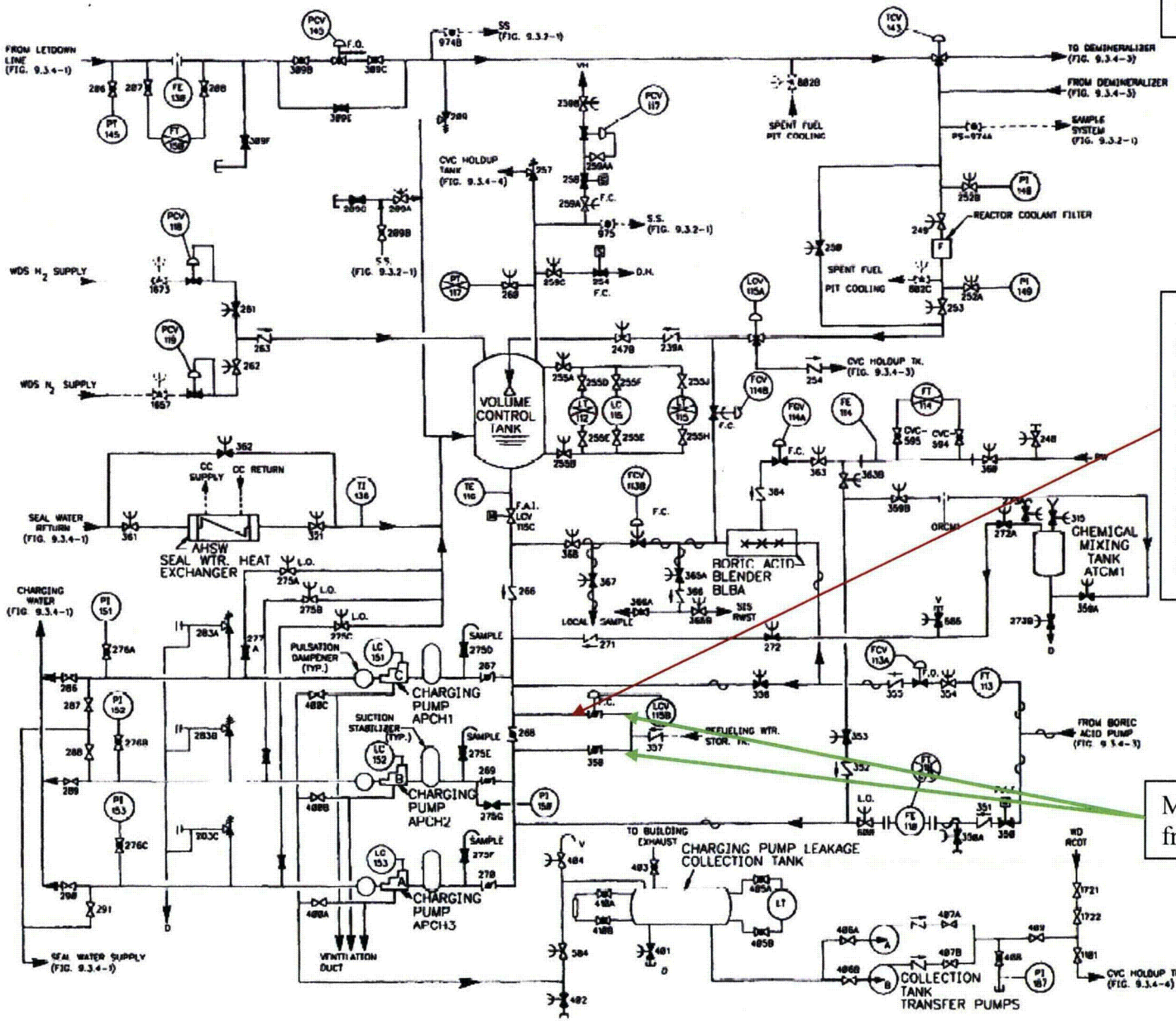
The proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in the No Significant Hazards Consideration Determination, the proposed change does not involve a significant hazards consideration.

2. As demonstrated in the No Significant Hazards Consideration Determination, the proposed change does not result in a significant increase in the consequences of an accident previously evaluated and does not result in the possibility of a new or different kind of accident. The proposed change does not result in an increase in the allowable effluents from normal operation. Therefore, the proposed change does not result in a significant change in the types or significant increases in the amounts of any effluents that may be released offsite.

3. The proposed change does not alter any parameters from which the individual and cumulative radiation exposure for HBRSEP, Unit No. 2, results. Therefore, the proposed change does not result in a significant increase in individual or cumulative occupational radiation exposures.

Updated Final Safety Analysis Report Figure 9.3.4-2



Approximate location of the pipe flaw. Note that this figure does not show the drain connection at this location, which is consistent with the Updated Final Safety Analysis Report level of detail associated with this system.

Makeup water pathways from the RWST.

United States Nuclear Regulatory Commission
Attachment III to Serial: RNP-RA/10-0028
2 Pages (including cover page)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
RELATED TO THE CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS)

MARKUP OF TECHNICAL SPECIFICATIONS PAGE

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Chemical and Volume Control System (CVCS)

LCO 3.4.17 Reactor Coolant Pump (RCP) seal injection shall be OPERABLE, with:

a. Two charging pumps shall be OPERABLE; and

b. Two Makeup Water Pathways from the Refueling Water Storage Tank (RWST) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required charging pump inoperable.	A.1 Restore required charging pump to OPERABLE status.	24 hours
B. One Makeup Water Pathway from the RWST inoperable.	B.1 Restore Makeup Water Pathway from the RWST to OPERABLE status.	~~24~~ 72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

(continued)

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

REQUEST FOR TECHNICAL SPECIFICATIONS CHANGE
RELATED TO THE CHEMICAL AND VOLUME CONTROL SYSTEM (CVCS)

RETYPED TECHNICAL SPECIFICATIONS PAGE

3.4 REACTOR COOLANT SYSTEM (RCS)

3.4.17 Chemical and Volume Control System (CVCS)

LCO 3.4.17 Reactor Coolant Pump (RCP) seal injection shall be OPERABLE, with:

c. Two charging pumps shall be OPERABLE; and

d. Two Makeup Water Pathways from the Refueling Water Storage Tank (RWST) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required charging pump inoperable.	A.1 Restore required charging pump to OPERABLE status.	24 hours
B. One Makeup Water Pathway from the RWST inoperable.	B.1 Restore Makeup Water Pathway from the RWST to OPERABLE status.	72 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

(continued)