

SCE&G -- EXPLANATION OF CHANGES

<u>Page</u>	<u>Affected Section</u>	<u>Bar #</u>	<u>Description of Change</u>	<u>Reason for Change</u>
3/4 5-4	4.5.2.a	1	Add valves 8133A, 8133B, and 8106 to the list of valves in Surveillance Requirement 4.5.2.a, page 3/4 5-4.	BTP EICSB 18 requires the Technical Specifications include a list and the required positions of manually-controlled, electrically operated valves to which the requirements for removal of electrical power is applied in order to satisfy the single failure criterion.

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

4.5.2 Each ECCS subsystem shall be demonstrated OPERABLE: -

- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
1. 8884	HHSI Hot Leg Injection	Closed
2. 8886	HHSI Hot Leg Injection	Closed
3. 8888A	LHSI Cold Leg Injection	Open
4. 8888B	LHSI Cold Leg Injection	Open
5. 8889	LHSI Hot Leg Injection	Closed
6. 8701A	RHR Inlet	Closed
7. 8701B	RHR Inlet	Closed
8. 8702A	RHR Inlet	Closed
9. 8702B	RHR Inlet	Closed

- b. At least once per 31 days by:

1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position, and
2. Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the reactor building which could be transported to the RHR and Spray Recirculation sumps and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the reactor building prior to establishing CONTAINMENT INTEGRITY, and
2. Of the areas affected within the reactor building at the completion of each reactor building entry when CONTAINMENT INTEGRITY is established.

- d. At least once per 18 months by:

1. Verifying automatic interlock action of the RHR system from the Reactor Coolant System by ensuring that, with a simulated or actual Reactor Coolant System pressure signal greater than or equal to 425 psig, the interlocks prevent the valves from being opened.

10. 8133A Charging / HHSI Cross-Connect Open
11. 8133B Charging / HHSI Cross-Connect Open
12. 8106 Charging Mini-Flow Header Isolation Open

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS

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- a. At least once per 12 hours by verifying that the following valves are in the indicated positions with power to the valve operators removed:

	<u>Valve Number</u>	<u>Valve Function</u>	<u>Valve Position</u>
1.	8884	HHSI Hot Leg Injection	Closed
2.	8886	HHSI Hot Leg Injection	Closed
3.	8888A	LHSI Cold Leg Injection	Open
4.	8888B	LHSI Cold Leg Injection	Open
5.	8889	LHSI Hot Leg Injection	Closed
6.	8701A	RHR Inlet	Closed
7.	8701B	RHR Inlet	Closed
8.	8702A	RHR Inlet	Closed
9.	8702B	RHR Inlet	Closed
10.	8133A	Charging/HHSI Cross-Connect	Open
11.	8133B	Charging/HHSI Cross-Connect	Open
12.	8106	Charging Mini-Flow Header Isolation	Open

- b. At least once per 31 days by:

1. Verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position, and
2. Verifying that the ECCS piping is full of water by venting the ECCS pump casings and accessible discharge piping high points.

- c. By a visual inspection which verifies that no loose debris (rags, trash, clothing, etc.) is present in the reactor building which could be transported to the RHR and Spray Recirculation sumps and cause restriction of the pump suction during LOCA conditions. This visual inspection shall be performed:

1. For all accessible areas of the reactor building prior to establishing CONTAINMENT INTEGRITY, and
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SAFETY EVALUATION
FOR REVISING THE SPECIFICATION FOR
ECCS CHARGING/HHSI PUMP CROSS CONNECT AND
MINI-FLOW HEADER ISOLATION MOTOR OPERATED VALVES
IN THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Description of Amendment Request

The Virgil C. Summer Nuclear Station (VCSNS) Technical Specifications (TS) are being revised to add the Charging/High Head Safety Injection (HHSI) Pump Cross Connect Valves (XVG-8133A and XVG-8133B) and the Charging Pump Mini-Flow Header Isolation Valve (XVG-8106) to Surveillance Requirement 4.5.2.a. This change is being made to satisfy requirements of Branch Technical Position (BTP) EICSB 18 which recommends the Technical Specifications include a list of the required positions of manually-controlled, electrically operated valves and identify those valves to which the requirements for removal of electrical power is applied in order to satisfy the single failure criterion. Surveillance Requirement 4.5.2.a requires these valves be tested once per 12 hours to verify that the valves are in the indicated position with power to the valve operators removed.

The addition of XVG-8133A and XVG-8133B to the Technical Specifications is the result of an NRC letter (Stephen Dembek [NRC] to Gary J. Taylor [SCE&G] dated January 3, 1996) that required these valves to meet the recommendations of BTP EICSB 18. BTP EICSB 18 establishes the acceptability of disconnecting power to electrical components of fluid systems as one means of designing against a single failure that might cause an undesirable component action. The BTP allows electrical power to be disconnected from valves in lieu of design changes (which is also acceptable) in order to protect against a failure which can cause undesired mechanical motion of the valve that may result in loss of a safety function. The specific concern is that while C charging pump is aligned to train B, a hot short in either valve could cause a spurious operation thus disabling all HHSI flow via the train B flow path. Therefore VCSNS will perform modifications during the tenth refueling outage to install a power lockout feature controlled from the main control board and redundant position indication on the main control board powered from the opposite train for these valves.

The addition of XVG-8106 to the Technical Specifications is being made to meet the recommendations of BTP EICSB 18. XVG-8106 meets the requirements of BTP EICSB 18 except that the valve is not currently included in the Technical Specifications (4.5.2.a). This change will add XVG-8106 to Technical Specification 4.5.2.a which requires the valve to be verified open with power removed once per 12 hours. Currently, power is verified removed from the valve once per 12 hours and the valve position is logged once per 31 days as part of the valve lineup. A review of past Surveillances has shown that XVG-8106 has never been found out of position during

the performance of the valve lineup since power lockout was installed for this valve (a station modification was performed in 1988 as part of the resolution of NRC Bulletin 86-03 which installed power lockout on the main control board for XVG-8106).

Safety Evaluation

The charging/HHSI cross connect valves (XVG-8133A and XVG-8133B) and the charging pump mini-flow header isolation valve (XVG-8106) belong to a subsystem of the Emergency Core Cooling System (ECCS). The ECCS is required during a loss of coolant accident (LOCA). The initiation of the ECCS does not require any realignment of these valves from their normal position. However, later in the transient, when the switchover from safety injection to cold leg recirculation is required, operator realignment of XVG-8133A and XVG-8133B may be required depending on which charging pumps are operating.

Thus, removing power from the valve operators for XVG-8133A and XVG-8133B will ensure a single failure (hot short in the control circuit for the valves) will not cause a spurious actuation of the valves during the injection or recirculation phase of the ECCS. A spurious actuation of the valves could cause HHSI flow via the train B flow path to be disabled. The modification to install a power lockout feature for these valves and redundant position indication is consistent with the requirements of BTP EICSB 18, which also requires these valves to be added to the Technical Specifications. The addition of these valves to the Technical Specification will require the valves to be verified open with power to the valve operator removed once per 12 hours.

The addition of XVG-8106 to the Technical Specifications is an administrative change to meet the recommendations of BTP EICSB 18. The valve already meets the other requirements of the BTP.

NO SIGNIFICANT HAZARDS EVALUATION
FOR REVISING THE SPECIFICATION FOR
ECCS CHARGING/HHSI PUMP CROSS CONNECT AND
MINI-FLOW HEADER ISOLATION MOTOR OPERATED VALVES
IN THE VIRGIL C. SUMMER NUCLEAR STATION
TECHNICAL SPECIFICATIONS

Description of Amendment Request

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The addition of XVG-8133A and XVG-8133B to the Technical Specifications is the result of an NRC letter (Stephen Dembek [NRC] to Gary J. Taylor [SCE&G] dated January 3, 1996) that required these valves to meet the recommendations of BTP EICSB 18. BTP EICSB 18 establishes the acceptability of disconnecting power to electrical components of fluid systems as one means of designing against a single failure that might cause an undesirable component action. The BTP allows electrical power to be disconnected from valves in lieu of design changes (which is also acceptable) in order to protect against a failure which can cause undesired mechanical motion of the valve that may result in loss of a safety function. The specific concern is that while C charging pump is aligned to train B, a hot short in either valve could cause a spurious operation thus disabling all HHSI flow via the train B flow path. Therefore VCSNS will perform modifications during the tenth refueling outage to install a power lockout feature controlled from the main control board and redundant position indication on the main control board powered from the opposite train for these valves.

The addition of XVG-8106 to the Technical Specifications is being made to meet the recommendations of BTP EICSB 18. XVG-8106 meets the requirements of BTP EICSB 18 except that the valve is not currently included in the Technical Specifications (4.5.2.a). This change will add XVG-8106 to Technical Specification 4.5.2.a which requires the valve to be verified open with power removed once per 12 hours. Currently, power is verified removed from the valve once per 12 hours and the valve position is logged once per 31 days as part of the valve lineup. A review of past

Surveillances has shown that XVG-8106 has never been found out of position during the performance of the valve lineup since power lockout was installed for this valve (a station modification was performed in 1988 as part of the resolution of NRC Bulletin 86 03 which installed power lockout on the main control board for XVG-8106).

Basis for No Significance Hazards Consideration Determination

South Carolina Electric & Gas Company (SCE&G) has evaluated the proposed changes to the VCSNS TS described above against the Significant Hazards Criteria of 10 CFR 50.92 and has determined that the changes do not involve any significant hazard. The following is provided in support of this conclusion:

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

The proposed change adds the charging/HHSI pump cross connect valves and the charging pump mini-flow header isolation valve to the ECCS Subsystems - $T_{avg} \geq 350^{\circ}\text{F}$ Technical Specification Surveillance Requirement. This Surveillance Requirement will require the valves to be verified open with power to the valve operators removed once per 12 hours. This change does not affect the probability of an accident previously evaluated. The charging/HHSI pump cross connect valves and the charging mini-flow header isolation valve are not initiators of any analyzed event. This change is the result of an NRC letter (Stephen Dembek [NRC] to Gary J. Taylor [SCE&G] dated January 3, 1996) which required SCE&G to comply with the recommendations of BTP EICSB 18. The charging pump/HHSI pump cross connect valves are being modified to meet the recommendations of the BTP (including this Technical Specification change). The charging pump mini-flow header isolation valve meets the requirements of the BTP except it is not located in the Technical Specifications. This change does not increase the consequences of an accident previously evaluated. Requiring the valves to be verified open with power removed from the valve operator once per 12 hours does not affect the assumptions relative to the mitigation of accidents or transients. This requirement ensures that the valves are in a position with power removed so that a failure will not occur that will affect the mitigation of an accident. These valves are required to be open during a LOCA. This change will ensure that the valves are open with power removed. Therefore, the change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does this change create the possibility of a new or different kind of accident from any accident previously evaluated?

The proposed change adds the charging/HHSI pump cross connect valves and the charging pump mini-flow header isolation valve to the ECCS Subsystems - $T_{avg} \geq 350^{\circ}\text{F}$ Technical Specification Surveillance Requirement. This Surveillance Requirement will require the valves to be verified open with power to the valve operators removed once per 12 hours. This change does not involve a significant change in the design or operation of the plant. This change is a result of BTP EICSB 18. The charging/HHSI pump cross connect valves are being modified to have power lockout capability, redundant indication on the main control board, and be included in the Technical Specifications. This will ensure that a single failure (hot short in the controls of either valve) will not cause spurious actuation of the valves during the injection or recirculation phase of the ECCS. The charging pump mini-flow header isolation valve meets the requirements of the BTP except it is not located in the Technical Specifications. The charging/HHSI pump cross connect valves and charging pump mini-flow header isolation valve are required to remain open during a LOCA. This modification will ensure that the valves will remain open during an accident which requires ECCS operation. The proposed change will not introduce any new accident initiators. Therefore, the change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the change involve a significant reduction in margin of safety?

The proposed change adds the charging/HHSI pump cross connect valves and the charging pump mini-flow header isolation valve to the ECCS Subsystems - $T_{avg} \geq 350^{\circ}\text{F}$ Technical Specification Surveillance Requirement. This Surveillance Requirement will require the valves to be verified open with power to the valve operators removed once per 12 hours. The ECCS is required to operate upon receipt of a safety injection signal. The charging/HHSI pump cross connect valves and the charging pump mini-flow header isolation valve are required to remain open during ECCS operation. However, a single failure may cause a spurious actuation (closure) of the valves which could hinder HHSI flow. The modification to the charging/HHSI cross connect valves (the addition of a power lockout feature and redundant position indication) and the added TS Surveillance Requirement will eliminate this failure scenario and ensure the valves remain in their safety function position (open). The charging pump mini-flow header isolation valves already contain a power lockout feature and redundant position indication. These valves are being added to the Technical Specifications to meet the requirements of BTP EICSB 18. Therefore, the change does not involve a significant reduction in a margin of safety.

Pursuant to 10 CFR 50.91, the preceding analyses provides a determination that the proposed TSCR poses no significant hazard as delineated by 10 CFR 50.92.

Environmental Assessment

This proposed Technical Specification change has been evaluated against criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10 CFR 51.21. It has been determined that the proposed change meets the criteria for categorical exclusion as provided for under 10 CFR 51.22(c)(9). The following is a discussion of how the proposed Technical Specification change meets the criteria for categorical exclusion.

10 CFR 51.22(c)(9): Although the proposed change involves change to requirements with respect to inspection or Surveillance Requirements,

- (i) the proposed change involves No Significance Hazards Consideration (refer to the No Significance Hazards Consideration Determination section of this Technical Specification Change Request);
- (ii) there are no significant changes in the types or significant increase in the amounts of any effluents that may be released offsite since the proposed changes do not affect the generation of any radioactive effluents nor do they affect any of the permitted release paths; and
- (iii) there is no significant increase in individual or cumulative occupational radiation exposure.

Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Based on the aforementioned and pursuant to 10 CFR 51.22 (b), no environmental assessment or environmental impact statement need be prepared in connection with issuance of an amendment to the Technical Specifications incorporating the proposed change requested.