

II. Markup of Proposed Changes

See the attached markup of proposed changes to Technical Specifications.

PLANT SYSTEMS

3/4.7.3 PRIMARY COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent primary component cooling water loops shall be OPERABLE, including ~~two~~ ^{ONE} OPERABLE pumps in each loop.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

- a. With one primary component cooling water (PCCW) ^{72 HOURS} ~~loop~~ ^{LOOP} inoperable, restore the required primary component cooling water pumps to OPERABLE status within ~~7 days~~ or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With two primary component cooling water pumps inoperable, restore at least one of the inoperable primary component cooling water pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With two primary component cooling water pumps within one loop inoperable, restore at least one of the inoperable pumps to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least two primary component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and
- b. At least once per 18 months during shutdown, by verifying that:
- 1) Each automatic valve servicing safety-related equipment actuates to its correct position on its associated Engineered Safety Feature actuation signal, ~~and~~
 - 2) Each of the four primary Component Cooling Water System pump starts automatically upon loss of or failure to start of its redundant pump within the loop.

III. Retype of Proposed Changes

See the attached retype of proposed changes to Technical Specifications. The attached retype reflects the currently issued version of Technical Specifications. Pending Technical Specification changes or Technical Specification changes issued subsequent to this submittal are not reflected in the enclosed retype. The enclosed retype should be checked for continuity with Technical Specifications prior to issuance.

Revision bars are provided in the right hand margin to designate a change in the text.

PLANT SYSTEMS

3/4.7.3 PRIMARY COMPONENT COOLING WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.3 At least two independent primary component cooling water loops shall be OPERABLE, including one OPERABLE pump in each loop.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTION:

With one primary component cooling water (PCCW) loop inoperable, restore the required primary component cooling water loop to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.3 At least two primary component cooling water loops shall be demonstrated OPERABLE:

- a. At least once per 31 days by verifying that each valve (manual, power-operated, or automatic) servicing safety-related equipment that is not locked, sealed, or otherwise secured in position is in its correct position; and
- b. At least once per 18 months during shutdown, by verifying that each automatic valve servicing safety-related equipment actuates to its correct position on its associated Engineered Safety Feature actuation signal.

IV. Safety Evaluation of License Amendment Request 93-01 Proposed Changes

Seabrook Station's Technical Specifications currently require two OPERABLE Primary Component Cooling Water loops with each loop having two OPERABLE pumps when in Modes 1, 2, 3, and 4. This requirement unnecessarily exceeds single failure criteria due to the 100% redundancy in each loop (2 full capacity pumps per loop). The proposed changes redefine an OPERABLE primary component cooling water loop as having one OPERABLE primary component cooling water pump. Additional changes are proposed to the duration that a primary component cooling water loop may be inoperable and to the surveillance requirements for primary component cooling water pumps.

The proposed Technical Specification changes are consistent with Updated Final Safety Analysis Report (UFSAR) Section 9.2, the conclusions of the new Primary Component Cooling Water System evaluation based on the model in the Seabrook Probabilistic Safety Assessment (IPEEE Report), and the Bases for Technical Specification 3/4.7.3.

As stated in the UFSAR, Section 9.2, the Primary Component Cooling Water System is designed to supply cooling water to safety related components required for safe shutdown and/or to mitigate the consequences of an accident, with the design basis event being a Loss of Coolant Accident (LOCA) coincident with a Loss of Offsite Power. The Primary Component Cooling Water System also serves as an intermediate fluid barrier between the Reactor Coolant System and the Service Water System to prevent the leakage of primary coolant to the environment. The Primary Component Cooling Water System is designed to perform these safety functions while accommodating a single failure of any component. The system has independent, redundant loops and each loop has redundant cooling water pumps each capable of supplying 100 percent of the flow required to dissipate plant heat loads during the design basis event.

The proposed change is consistent with maintaining redundant primary component cooling water loops, each of which is capable of providing the required safety functions during the design basis event, with a single failure of any component. An OPERABLE primary component cooling water loop will be defined as having one OPERABLE pump, with both loops OPERABLE in Modes 1, 2, 3, and 4. This provides the redundancy needed to meet single failure criteria. The primary component cooling water loops are not modified in any way, and system integrity is not affected. Since each of the primary component cooling water pumps continues to be powered from the emergency buses, a loss of power to one bus will still leave the redundant primary component cooling water loop unaffected with at least one OPERABLE pump. The standby primary component cooling water pump will be considered an installed spare to provide operational flexibility, increased system availability, and the capability for on-line pump maintenance. The proposed 72 hour Allowed Outage Time (AOT) for a primary component cooling water loop is consistent with the Standard Technical Specifications for Westinghouse Reactors

(NUREG-1431) and is supported by a new Probabilistic Risk Assessment for the Primary Component Cooling Water System.

North Atlantic performed a Probabilistic Risk Assessment Evaluation which assumes that a standby primary component cooling water pump is unavailable during periods of planned or unplanned maintenance, consistent with the assumptions for other equipment that does not have a Limiting Condition for Operation. The new primary component cooling water model developed in this analysis was used to evaluate the unavailability of both primary component cooling water pumps in a loop consistent with the proposed Action Statement requirement of 72 hours. This evaluation demonstrates that the impact on the core damage risk associated with the proposed changes to Technical Specification 3/4.7.3 is insignificant within the bounds of the core damage frequency uncertainty. The evaluation did not include the positive contributions due to increased flexibility in performing pump maintenance without changing the plant operating mode or the fact that in actuality, primary component cooling water pump maintenance would receive high priority to restore its availability as discussed below.

The PRA evaluation (section 3.2) indicates that the proposed Technical Specification changes would increase the PCCW initiating event frequency by a factor of approximately 1.6. The initiating event frequency referred to in the PRA is the probability that both primary component cooling water pumps in a loop will be unavailable at one time. The concurrent unavailability of both pumps in a primary component cooling water loop would result in a plant shutdown due to the associated loss of cooling to two Reactor Coolant Pump motors. For this reason, primary component cooling water pump maintenance would receive high priority. Since at least one pump in the second loop would still be operable, the Primary Component Cooling System would continue to be capable of performing its safety functions. The Primary Component Cooling Water Probabilistic Risk Assessment Evaluation is enclosed in Section VIII.

The proposed change remains consistent with the Bases for Technical Specification 3/4.7.3. As stated above, each of the two redundant, independent primary component cooling water loops is capable of providing the safety functions required of the Primary Component Cooling Water System while assuming a single failure.

The requirement specified in Surveillance Requirement 4.7.3.b.2 to verify that each of the four primary component cooling water pumps starts automatically upon loss of or failure to start of the redundant pump within the loop is deleted. With the standby primary component cooling water pump not required for loop OPERABILITY, the basis for testing the automatic start capability of these pumps as a Technical Specification Surveillance no longer exists. The deletion of this portion of Surveillance Requirement 4.7.4.b.2 does not affect the regular inservice testing which is performed on the primary component cooling water pumps as required by Technical Specification Surveillance Requirement 4.0.5. The OPERABILITY of the primary component cooling water pumps is demonstrated

during quarterly inservice testing of these pumps as required by North Atlantic Procedure MA 6.4 "Inservice Testing of Pumps."

While a literal interpretation of the proposed change could result in having a primary component cooling water pump inoperable for an extended period of time, North Atlantic has committed to a safe, conservative operating philosophy. This policy would preclude operation of the Primary Component Cooling Water System with the standby pump unavailable for an extended period of time. The Seabrook Station Maintenance Manual identifies a priority system for the repair of system components. In the case of the Primary Component Cooling Water System, a pump repair would receive a high priority to minimize the potential for a forced plant shutdown resulting from loss of cooling to two Reactor Coolant Pump motors.

In addition, the proposed changes to Technical Specification 3/4.7.3 will enhance plant operation by providing greater flexibility in planning and performing maintenance on the Primary Component Cooling Water System. Most maintenance on the pumps is currently performed during refueling outages due to the restrictive nature of the current Technical Specifications. Performing planned maintenance at times other than during outages would provide greater flexibility in outage planning and would likely improve plant and component reliability. The proposed changes will also permit the performance of unplanned maintenance during plant operation while minimizing plant heatup and cooldown cycles.

V. Determination of Significant Hazards for License Amendment Request 93-01
Proposed Changes

- (1) The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The Primary Component Cooling Water System provides cooling water flow to safeguard components that are required for safe shutdown and/or to mitigate the consequences of an accident. These components are the Emergency Core Cooling System (ECCS) pumps and heat exchangers, the Containment Building Spray System (CBS) pumps and heat exchangers, and the Containment enclosure coolers. The design basis accident of concern is a Loss of Coolant Accident (LOCA) concurrent with a Loss of Offsite Power. The Primary Component Cooling Water System also provides an intermediate fluid barrier between the Reactor Coolant System and the Service Water System to prevent leakage of primary coolant to the environment.

The Primary Component Cooling Water System is designed to perform its safety functions assuming a single failure of any component. This is accomplished with two redundant, independent loops which each supply redundant safeguard components, as well as the reactor coolant pump thermal barrier loop and nonsafeguard components. Each of the primary component cooling water loops contains two full capacity pumps. The required safety functions can be fulfilled with one pump in one primary component cooling water loop. A second pump in an independent loop provides the redundancy required to fulfill single failure criteria.

The proposed Technical Specification changes will continue to ensure that the safety functions of the Primary Component Cooling Water System are fulfilled with continued capability to meet single failure criteria. An OPERABLE primary component cooling water loop will be defined as having one OPERABLE pump, with both loops OPERABLE in Modes 1, 2, 3, and 4, which provides the redundancy needed to meet single failure criteria. The primary component cooling water loops are not modified in any way. Since each of the primary component cooling water pumps continues to be powered from the emergency buses, a loss of power to one bus will still leave the other primary component cooling water loop unaffected with at least one OPERABLE pump. Inservice testing of the primary component cooling water pumps that is required by Technical Specification 4.0.5 will continue to be performed on all four pumps. The 72 hour Allowed Outage Time (AOT) for a primary component cooling water loop is consistent with the Standard Technical Specifications for Westinghouse Reactors (NUREG-1431) and is supported by a new Probabilistic Risk Assessment for the Primary Component Cooling Water System.

The Primary Component Cooling Water System Probabilistic Risk Assessment model was revised to include the affects of removing the standby primary component cooling water pump from the definition of loop OPERABILITY and increasing the Allowed Outage Time (AOT) for an inoperable primary component cooling water loop. The PRA evaluation indicates that the proposed Technical Specification changes would have a negligible effect on the PCCW System availability. The changes would

increase the PCCW initiating event frequency, but the overall impact on core damage risk would be insignificant. This evaluation conservatively did not include the positive contributions due to increased flexibility in performing pump maintenance without changing the plant operating mode or the fact that in actuality, primary component cooling water pump maintenance would receive high priority to restore its availability.

- (2) The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed Technical Specification changes do not change the design or function of any plant structure, system or component, nor do they introduce any new failure modes. The Primary Component Cooling Water System will continue to meet single failure criteria for the design basis accident by requiring two redundant primary component cooling water loops, with each loop containing a full capacity pump capable of removing post-LOCA heat loads from the design basis accident. There are no modifications to plant structures, systems and components associated with these proposed changes, and the operation of plant equipment and systems remains unchanged. Primary Component Cooling Water System integrity is unaffected by these proposed changes. Since the changes proposed in this License Amendment Request do not revise existing plant structures, systems and components nor does it change the manner in which the plant is operated and in which it will respond to the design basis accident the proposed changes do not create the possibility of a new or different kind of accident from any previously analyzed.

- (3) The proposed changes do not result in a significant reduction in the margin of safety.

The bases for Technical Specification 3/4.7.3 state the following:

"The OPERABILITY of the Primary Component Cooling Water System ensures that sufficient cooling capacity is available for continued operation of safety-related equipment during normal and accident conditions. The redundant cooling capacity of this system, assuming a single failure, is consistent with the assumptions used in the safety analyses."

The changes proposed in License Amendment Request 93-01 do not alter the Primary Component Cooling Water System's ability to perform its safety related functions as defined in the Bases of Technical Specification 3/4.7.3. As discussed for criterion (1) and (2) above, OPERABILITY of the standby primary component cooling water pump is not required to ensure that at least one loop with at least one pump supplying 100 percent of the required flow is available during the design basis accident. Thus, there is no significant reduction in the margin of safety as defined by the Technical Specification Bases.

The margin of safety as defined by the increase in core damage frequency is also not significantly increased. The Primary Component Cooling Water System Probabilistic

Risk Assessment model was revised to include the affects of removing the standby primary component cooling water pump from the definition of loop OPERABILITY and increasing the Allowed Outage Time (AOT) for an inoperable primary component cooling water loop. The PRA evaluation indicates that the proposed Technical Specification changes would have a negligible effect on the PCCW System availability. The changes would increase the PCCW initiating event frequency, but the overall impact on core damage risk is insignificant. This evaluation conservatively did not include the positive contributions due to increased flexibility in performing pump maintenance without changing operating mode or the fact that in actuality, primary component cooling water pump maintenance would receive high priority to restore its availability.

VI. Proposed Schedule for License Amendment Issuance and Effectiveness

North Atlantic requests NRC review of License Amendment Request 93-01 and issuance of a license amendment having immediate effectiveness by August 26, 1993.

VII. Environmental Impact Assessment

North Atlantic has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, North Atlantic concludes that the proposed change meets the criteria delineated in 10CFR51.22(c)(9) for a categorical exclusion from the requirements for an Environmental Impact Statement.

VIII. Other Supporting Information

PRA Evaluation: Change in Primary Component Cooling
Water Tech Spec 3.7.3
Engineering Evaluation 92-42
December 1992

Enclosed herein.