YANKEE ATOMIC ELECTRIC COMPANY



1671 Worcester Road, Framingham, Massachusetts 01701

June 27, 1988 P.C. 220 FYR 88-94

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

Cleanup S"stem

Reference:	(a)	License	No.	DPR-3	(Docket	No.	50-29)	

Attachments:	 A. Proposed Technical Specification Changes B. Water Cleanup System Flow Diagram 							
	C. Containment Penetration Drawing D. LPSI Connection Drawing							
Subject:	Request for Changes to Technical Specifications for New Water							

Sector Sector

Dear Sir: Pursuant to Section 50.90 of the Commission's Rules and Regulations, the

Yankee Atomic Electric Company (YAEC) hereby requests the authorization to make the following change.

Proposed Change

Reference is made to the Technical Specifications of License No. DPR-3. The specific change is shown in Attachment A. We propose to modify the Technical Specifications as described below:

- Add WC-MOV-603, 605, and 615 to the surveillance requirements of Section 4.5.2.b.1.
- Change the function of WC-V-622 in Section C.2 of Table 3.6-1 from spare penetration check valve to WCS return check valve.
- Delete WC-V-621 from Section B.1 of Table 3.6-1 and add WC-MOV-618 and 619 to Section D.1.

Note: Valves WC-V-621 and 622 are being added by Proposed Change No. 219.

Reason for Change

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The reason for this proposed change is to allow for the installation of two piping modifications necessary for installation of an enhanced Water Clean-Up System (WCS) at the Yankee plant.

The WCS is being added to process low level waste generated during normal plant operation and to remove cesium and iodine from recirculating water following a loss of coolant incident.

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Basis For Change

Attachment B is a simplified flow diagram of the WCS. During normal plant operation, waste water would be pumped from the Waste Disposal System through the WCS ion exchange vessels for removal of normal fission products and other chemicals. The cleaned water would be returned to the Waste Disposal System for additional processing and/or disposal. The WCS would reduce the volume of waste shipped off-site, by up to 90%, resulting in a savings of approximately \$200,000 per year.

During the recirculation mode of operation, a slip-stream of water from the containment sump would be taken from a two-inch connection to the LPSI header piping. This water would be run through the WCS ion-exchang. equipment, where fission products are removed. The water would then be returned to the sump through a spare piping penetration.

We are providing for this mode of WCS operation because a review of TMI related experience indicates that, under certain conditions, quantities of cesium could be included in the recirculating water. If cesium is present, then it would be highly desirable to remove it from the water to reduce exposure to equipment, and to allow for early access to the equipment and environs following such an incident.

Attachment C and D are simplified drawings of the two piping modifications that are the subject of this proposed change. The connection to the LPCI piping will be isolated by normally closed motor-operated valves, with power removed by two breakers in series. The containment penetration will be isolated by a check valve inside containment, and by normally closed motor-operated valves outside containment, with power removed by two breakers in series. The containment penetration. We sign will be in full compliance with the requirements of 10CFR50, Appendix A, Criterion 56.

The addition of the containment isolation provisions will be subject to surveillance and test requirements based upon current Technical Specifications and 10CFR50, Appendix J testing requirements. The addition of the ECCS connection will be subject to position verification on a surveillance basis to ensure that the operability of the ECCS is not compromised.

Safety Considerations

This proposed addition of new containment isolation boundary valves which conform to 10CFR50, Appendix A, Criterion 56, and ECCS header boundary valves does not expose the plant to an increased chance of failure of either containment integrity or ECCS operability.

The inside containment check valve, WC-V-622, and the outside containment motor-operated valves, WC-MOV-618 and 619 which replace WC-V-621, will serve as containment isolation valves. These valves provide isolation boundaries for the two-inch WCS return line to the VC. The addition of these valves to Table 3.6-1, Sections C and D, involves a change to the Technical Specifications. The containment leakage limiting conditions for operation set forth in Section 3.6.1.2 are applicable to all containment barriers listed in Table 3.6-1. The additional three valves are pieces of equipment which shall be subject to existing requirements and limitations as set forth in the current Technical Specifications. United States Nuclear Regulatory Commission

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WC-MOV-603, 605, and 615 will serve as closed, boundary isolation valves connected to the ECCS. WC-MOV-603, 605, and 615 have been added to Section 4.5.2.b.1 and are, therefore, additional pieces of equipment which will be subject to existing surveillance requirements set forth in the Technical Specifications.

The WCS would not be used in the recirculation mode until several days after the postulated incident. At that time it is expected that the Main Coolant System (MCS) would be depressurized and all MCS conditions would be stabilized.

The WCS, once connected to the LPSI System, will comprise a closed loop to containment, designed to full LPSI System pressure. When the WCS is placed into service, one LPSI pump and one HPSI pump would be in operation. This pumping combination will provide approximately 300 gpm to the MCS. A flow of approximately 20 gpm is all that is required to the core for decay heat removal long term. The WCS will require approximately 50 gpm from the discharge off of the operating LPSI pump. In this operating configuration, this WCS flow would not reduce the flow to the MCS significantly.

As such:

- This proposed change would not involve a significant increase in the 1. probability or consequences of an accident previously evaluated. The new containment penetration design conforms to 10CFR50, Appendix A, Criterion 56. This penetration will be Type C tested in accordance with 10CFR50, Appendix J requirements. The containment leakage limiting condition for operation in Technical Specification 3.6.1.2 remains unchanged. Any leakage attributed to this penetration must still fit within Technical Specification 3.6.1.2 limits. The new penetration to the LPSI header is isolated with closed motor-operated valves with power removed by two breakers in series, making the probability of its failure insignificant. The ECCS subsystem leakage limiting condition for operation in Technical Specification 3.5.5 remains unchanged, and any leakage by this new penetration must remain within this limit. Operation of the WCS will not significantly reduce the flow to the MCS during long-term recirculation.
- 2. This proposed change would not create the possibility of a new or different kind of accident from any previously analyzed. The new containment penetration and LPSI header connections are identical to existing installed equipment. Any failures would be identical to those previously analyzed, and would not create any new or different kind of accident.
- 3. This proposed change would not involve a significant reduction in a margin of satety. The new containment penetration and LPSI header connection do not reduce the margin of safety of any Technical Specification. The limiting conditions for operation of Technical

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Specifications 3.6.1.2 and 3.5.5 remain unchanged, ensuring the present margins of safety are maintained. Operation of the WCS will not significantly reduce the long-term recirculation flow delivered to the MCS, maintaining the existing margin of safety.

Based on the considerations contained herein, it is concluded that there is reasonable assurance that operation of the see plant consistent with the proposed Technical Specifications will not en ' ger the nealth and safety of the public. This proposed change has been reviewed by the Nuclear Safety Audit and Review Committee.

Fee

An application fee of \$150.00 is enclosed in accordance with 10CFR170.21.

Schedule of Change

This change to the Yankee Technical Specifications will be implemented following commission approval and upon completion of the WCS installation. A timely review and approval of this submittal to be consistent with our plans for design and installation of the WCS would be appreciated. We request approval of this submittal as soon as practical.

We trust that you will find the submittal satisfactory; however, should you desire additional information, please contact us.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

B. L. Drawbridge Vice President and Manager of Operations

BLD/25.53. Attachment

cc: USNRC Region I USNRC Resident Inspector, YNPS

COMMONWEALTH OF MASSACHUSETTS)

MIDDLESEX COUNTY

Then personally appeared before me, B. L. Drawbridge, who, being duly sworn, did state that he is Vice President and Manager of Operations of Yankee Atomic Electric Company, that he is duly authorized to execute and file the foregoing document in the name and on the behalf of Yankee Atomic Electric Company and that the statements therein are true to the best of his knowledge and belief.

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Robert H. Groce My Commission Expires

Notary Public August 29, 1991

ATTACHMENT A

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Proposed Technical Specification Changes