

Mr. Samuel L. Newton
 Vice President, Operations
 Vermont Yankee Nuclear Power Corporation
 185 Old Ferry Road
 Brattleboro, VT 05301

January 3, 2000

SUBJECT: INSERVICE TESTING PROGRAM RELIEF REQUEST RR-V17 FOR VERMONT
 YANKEE NUCLEAR POWER STATION

Dear Mr. Newton:

By letter dated November 16, 1999, you requested that we supplement or clarify our letter and safety evaluation dated October 21, 1999, regarding the subject relief request. On October 21, 1999, we approved your alternatives to the requirements that each service water system loop header discharge check valve be disassembled every refueling outage. You had proposed to disassemble and inspect, or non-intrusively test, one of the two valves every refueling outage.

Your November 16, 1999, letter requested clarification in the area of the use of non-intrusive testing. You stated that although we discussed your proposed use of non-intrusive testing in our safety evaluation, the "Evaluation" section of the safety evaluation only establishes that you can apply a sampling approach to disassembly activities and it does not further discuss non-intrusive testing. You also state that you consider that specific NRC approval is necessary for the use of non-intrusive testing.

In response to your letter, we have revised our evaluation of Relief Request RR-V17, Revision 0, to specifically address the alternative to non-intrusively test the check valves on a sampling basis. Section 2.1 of our October 21, 1999, safety evaluation is hereby replaced by the enclosed section 2.1. The alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) based on it providing an acceptable level of quality and safety. The other alternative, check valve sample disassembly and inspection, which you also proposed in this relief request continues to be approved pursuant to 10 CFR 50.55a(f)(4)(iv).

If there are any questions please contact Richard Croteau of my staff at (301) 415-1475.

Sincerely,
 Original signed by:
 James W. Clifford, Chief, Section 2
 Project Directorate I
 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

URG FILE

Docket No. 50-271
 Enclosure: As stated
 cc w/encl.: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

January 3, 2000

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Sincerely,

Bartholomew C. Buckley for
James W. Clifford, Chief, Section 2
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-271

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cc w/encl.: See next page

Vermont Yankee Nuclear Power Station

cc:

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2.0 VALVE RELIEF REQUEST

2.1 Relief Request RR-V17, Revision 0

The licensee requests relief from the testing requirements of OM-10 paragraph 4.3.2.4(c). The Code requires that each check valve be disassembled every refueling outage. The licensee proposes two alternatives, either to disassemble and inspect or to non-intrusively test, one of the two service water system loop header discharge check valves every refueling outage.

2.1.1 Licensee's Basis for Requesting Relief

The licensee states:

Relief is requested on the basis that OMa-1988, Part 10, Paragraph 4.3.2.4(c) permits disassembly every refueling outage to verify operability of check valves. NUREG 1482 and Generic Letter 89-04, Position 2 permit the use of a sample disassembly and inspection plan when the licensee determines it is burdensome to disassemble and inspect all applicable valves each refueling outage. Additionally, NUREG 1482, 4.1.2 permits the use of non-intrusive techniques using a sample program. However, since the issuance of the NUREG recommendation, the NRC staff determined that the legal basis for approving the deviation from Code requirements may not be accomplished by referencing the NUREG. The deviation may only be authorized as an alternative to the regulations pursuant to 10 CFR 50.55a(a)(3)(ii) or as a specified exemption to 10 CFR 50.12.

During refueling outages extensive maintenance is performed on all Service Water components in the loop scheduled to be out of service while relying on the operable loop to supply needed loads. It is burdensome to drain portions of both Service Water Loops during each refueling outage to affect component disassembly of only one valve.

2.1.2 Alternative Testing

The licensee proposes:

OMa-1988, Part 10, Paragraph 4.3.2.4(c) permits disassembly every refueling outage to verify operability of check valves. NUREG 1482 and Generic Letter 89-04, Position 2 permit the use of a sample disassembly and inspection plan when the licensee determines it is burdensome to disassemble and inspect all applicable valves each refueling outage. Additionally, NUREG 1482, 4.1.2 permits the use of non-intrusive techniques using a sample program.

Partial flow testing of these valves is satisfied quarterly. Disassembly and inspection or use of non-intrusive techniques will be used to satisfy forward and reverse flow testing. Use of either method will be performed using a sampling program during refueling outages. A sampling program is justified due to the extent of system isolation and drain-down required to perform check valve disassembly combined with the need to keep certain ECCS systems and the diesel generators available during refueling outages. Regarding non-intrusive testing, NUREG 1482 specifies that the extensive effort to set

up test equipment and the adverse impact on system operation provide sufficient justification to defer the test to a refueling outage.

Specifically, one check valve will be disassembled and inspected or non-intrusively tested every refueling outage with the other check valve being disassembled and inspected or non-intrusively tested the following outage. During the disassembly, the internals of the valve will be verified to be structurally sound (no loose or corroded parts). If the disassembled valve is not capable of achieving full stroke when exercised or there is binding or failure of the valve internals, the other valve will also be disassembled, inspected and manually exercised during the same refuel outage. Regarding non-intrusive testing, if problems are found with the sample valve that are determined to affect the operational readiness of the valve, the other valve must be tested using non-intrusive techniques during the same outage.

2.1.3 Evaluation

The valves for which relief is requested, V70-43A and V70-43B, are 8-inch swing check valves in the service water system. These check valves have a safety function in the open direction to provide cooling water to various emergency core cooling system (ECCS) room area coolers during normal plant operation and to the standby emergency diesel generator jacket water, lube oil and after-coolers when the diesel generator is in service. The valves have a safety function in the closed direction to prevent reverse flow during the service water alternate cooling mode of operation. The Code, OM-10 paragraph 4.3.2, requires that these check valves be exercised nominally every 3 months. As an alternative to demonstrating valve obturator movement, the Code allows disassembly every refueling outage to determine operability of the valves (OM-10 paragraph 4.3.2.4(c)). The licensee proposes to either disassemble and inspect or non-intrusively test, one of the two valves every refueling outage. The valve to be tested will alternate every refueling outage.

The staff Position 2 of GL 89-04 allows for the employment of a sample disassembly and inspection plan for groups of identical valves in similar applications. The sample disassembly and inspection plan involves grouping similar valves and testing one valve in each group during each refueling outage. Guidelines for this plan are stated in Appendix A of NUREG-1482. The sampling technique requires that each valve in the group be the same design and have the same service conditions including valve orientation. Additionally, at each disassembly the licensee must verify that the disassembled valve is capable of full-stroking and that the internals of the valve are structurally sound. Also, if the disassembly is to verify the full-stroke capability of the valve, the disc should be manually exercised.

A different valve of each group is required to be disassembled, inspected, and manually full-stroke exercised at each successive refueling outage, until the entire group has been tested. If the disassembled valve is not capable of being full-stroke exercised or there is binding or failure of valve internals, the remaining valves in that group must also be disassembled, inspected and manually full-stroke exercised during the same outage. Once this is complete, the sequence of disassembly must be repeated.

The 1995 ASME OM Code, paragraph ISTC 4.5.4(c) allows for a sample disassembly examination program to be used to verify valve obturator movement. The sample disassembly examination program shall group check valves of similar design, application, and service condition and require a periodic examination of one valve from each group.

The licensee's proposed alternative of check valve sample disassembly is consistent with paragraph ISTC 4.5.4(c) and Position 2 of GL 89-04.

NUREG-1482 section 4.1.2 discusses the use of non-intrusive testing techniques in a sampling plan for groups of identical valves in the same service. On a rotating schedule, one valve would be non-intrusively tested each time the testing is performed. If problems are found with the sample valve that are determined to affect its operational readiness, all valves in the group will be tested using non-intrusive techniques during the same outage.

The licensee's proposed alternative sample non-intrusive testing plan is consistent with the staff's guidance in NUREG-1482 and provides an adequate method for ensuring the operational readiness of the check valves.

2.1.4 Conclusion

The licensee proposed two alternatives to the requirements of OM-10 paragraph 4.3.2.4(c). The alternative check valve sample disassembly plan is approved pursuant to 10 CFR 50.55a(f)(4)(iv). This alternative meets the requirements of the 1995 OM Code paragraph ISTC 4.5.4(c) which has been incorporated by reference into 10 CFR 50.55a (64 FR 51370). The alternative check valve sample non-intrusive testing plan is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the remainder of the third 10-year interval. This alternative testing method provides an acceptable level of quality and safety.