

April 23, 2002

Mr. Michael A. Balduzzi
Senior Vice President and Chief Nuclear Officer
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
P.O. Box 7002
Brattleboro, VT 05302-7002

SUBJECT: RELIEF REQUEST RR-V20, REVISION 0, RELATED TO THE INSERVICE TESTING PROGRAM, VERMONT YANKEE NUCLEAR POWER STATION (TAC NO. MB3469)

Dear Mr. Balduzzi:

By letter dated November 20, 2001, Vermont Yankee Nuclear Power Corporation (VY), the licensee for Vermont Yankee Nuclear Power Station (Vermont Yankee), submitted Relief Request RR-V20, Revision 0, proposing an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The licensee has requested relief for selected manual valves from the test requirements of OM-10, 1988 Edition, with 1989 Addenda. These selected manual valves are in the service water, alternate cooling water, fuel pool cooling, reactor building closed cooling water, and instrument air systems. The licensee proposes to test these valves either on a once-per-cycle or during a refueling outage basis. Vermont Yankee is on a 18-month fuel cycle.

Based on the information provided in Relief Request RR-V20, Revision 0, the Nuclear Regulatory Commission (NRC) concludes that the licensee's proposed alternative will provide an acceptable level of quality and safety. The NRC staff finds the licensee's request to be acceptable and, therefore, also authorizes the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i) for the third 10-year inservice inspection interval. The staff's evaluation is contained in the enclosure. If you have any questions, please call Robert Pulsifer, the Project Manager, at (301) 415-3016.

Sincerely,

/RA/

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

Docket No. 50-271

Enclosure: Safety Evaluation

cc w/encls: See next page

April 23, 2002

Mr. Michael A. Balduzzi
Senior Vice President and Chief Nuclear Officer
Vermont Yankee Nuclear Power Corporation
185 Old Ferry Road
P.O. Box 7002
Brattleboro, VT 05302-7002

SUBJECT: RELIEF REQUEST RR-V20, REVISION 0, RELATED TO THE INSERVICE TESTING PROGRAM, VERMONT YANKEE NUCLEAR POWER STATION (TAC NO. MB3469)

Dear Mr. Balduzzi:

By letter dated November 20, 2001, Vermont Yankee Nuclear Power Corporation (VY), the licensee for Vermont Yankee Nuclear Power Station (Vermont Yankee), submitted Relief Request RR-V20, Revision 0, proposing an alternative to the requirements of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI. The licensee has requested relief for selected manual valves from the test requirements of OM-10, 1988 Edition, with 1989 Addenda. These selected manual valves are in the service water, alternate cooling water, fuel pool cooling, reactor building closed cooling water, and instrument air systems. The licensee proposes to test these valves either on a once-per-cycle or during a refueling outage basis. Vermont Yankee is on a 18-month fuel cycle.

Based on the information provided in Relief Request RR-V20, Revision 0, the Nuclear Regulatory Commission (NRC) concludes that the licensee's proposed alternative will provide an acceptable level of quality and safety. The NRC staff finds the licensee's request to be acceptable and, therefore, also authorizes the proposed alternative pursuant to 10 CFR 50.55a(a)(3)(i) for the third 10-year inservice inspection interval. The staff's evaluation is contained in the enclosure. If you have any questions, please call Robert Pulsifer, the Project Manager, at (301) 415-3016.

Sincerely,

/RA/

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

Docket No. 50-271

Enclosure: Safety Evaluation

cc w/encls: See next page

DISTRIBUTION:

PUBLIC	J. Clifford	T. Clark	W. Beckner
PDI-2 R/F	R. Pulsifer	OGC	ACRS
S. Richards	T. Terao	G. Hill (2)	C. Anderson, RI

Accession Number: ML020850505

OFFICE	PDI-2/PM	PDI-2/LA	EMEB	OGC	PDI-2/SC
NAME	RPulsifer	TClark	DTerao	RHoefling	JClifford
DATE	4/3/02	4/3/02	4/4/02	4/17/02	4/22/02

OFFICIAL RECORD COPY

Vermont Yankee Nuclear Power Station

cc:

Regional Administrator, Region I
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. David R. Lewis
Shaw, Pittman, Potts & Trowbridge
2300 N Street, N.W.
Washington, DC 20037-1128

Ms. Christine S. Salembier, Commissioner
Vermont Department of Public Service
112 State Street
Montpelier, VT 05620-2601

Mr. Michael H. Dworkin, Chairman
Public Service Board
State of Vermont
112 State Street
Montpelier, VT 05620-2701

Chairman, Board of Selectmen
Town of Vernon
P.O. Box 116
Vernon, VT 05354-0116

Mr. Michael Hamer
Operating Experience Coordinator
Vermont Yankee Nuclear Power Station
P.O. Box 157
320 Governor Hunt Road
Vernon, VT 05354

G. Dana Bisbee, Esq.
Deputy Attorney General
33 Capitol Street
Concord, NH 03301-6937

Chief, Safety Unit
Office of the Attorney General
One Ashburton Place, 19th Floor
Boston, MA 02108

Ms. Deborah B. Katz
Box 83
Shelburne Falls, MA 01370

Mr. Raymond N. McCandless
Vermont Department of Health
Division of Occupational
and Radiological Health
108 Cherry Street
Burlington, VT 05402

Mr. Gautam Sen
Licensing Manager
Vermont Yankee Nuclear Power
Corporation
185 Old Ferry Road
P.O. Box 7002
Brattleboro, VT 05302-7002

Resident Inspector
Vermont Yankee Nuclear Power Station
U. S. Nuclear Regulatory Commission
P.O. Box 176
Vernon, VT 05354

Director, Massachusetts Emergency
Management Agency
ATTN: James Muckerheide
400 Worcester Rd.
Framingham, MA 01702-5399

Jonathan M. Block, Esq.
Main Street
P. O. Box 566
Putney, VT 05346-0566

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

FOR VALVE RELIEF REQUEST RR-V20, REVISION 0,

RELATED TO THE INSERVICE TESTING PROGRAM

VERMONT YANKEE NUCLEAR POWER STATION

VERMONT YANKEE NUCLEAR POWER CORPORATION

DOCKET NO. 50-271

1.0 INTRODUCTION

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a, requires that inservice testing (IST) of certain American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves be performed in accordance with Section XI of the ASME *Boiler and Pressure Vessel Code* (ASME Code) and applicable addenda, except where alternatives have been authorized or relief has been requested by the licensee and granted by the Nuclear Regulatory Commission (NRC) pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a.

In proposing alternatives or requesting relief, a licensee must demonstrate that (1) the proposed alternatives provide an acceptable level of quality and safety, (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, or (3) conformance is impractical for the facility. Section 50.55a authorizes the NRC to approve alternatives to and grant relief from ASME Code requirements upon making the necessary findings. NRC guidance in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides acceptable alternatives to the ASME Code requirements. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482, "Guidelines for Inservice Testing at Nuclear Power Plants."

In a letter dated November 20, 1998 (Ref. 1), Vermont Yankee Nuclear Power Corporation (VY/the licensee) submitted Revision 19 to the third 10-year IST program for Vermont Yankee Nuclear Power Station (VYNPS). The third 10-year IST interval for VYNPS began on September 1, 1993, and is scheduled to end on August 31, 2003. VYNPS' IST program was developed in accordance with the 1989 Edition of the ASME Code, which references ASME/ANSI OM standards Part 1, Part 6, and Part 10 (OM-1, OM-6, and OM-10) for IST of safety and relief devices, pumps, and valves, respectively.

In a letter dated November 20, 2001 (Ref. 2), the licensee submitted Relief Request No. RR-V20, Revision 0. The licensee has requested relief for selected manual valves from the test requirements of OM-10, 1988 Edition, with 1989 Addenda. The licensee proposes to test these valves on a once-per-cycle basis or during a refueling outage (nominally every 18 months).

Enclosure

2.0 VALVE RELIEF REQUEST NO. RR-V20

The licensee has requested relief for the manual valves listed in Tables 1 and 2 from the test requirements as defined in paragraph 4.2.1.1 of OM-10, 1988 Edition, with 1989 Addenda. OM-10, paragraph 4.2.1.1, "Exercising Test Frequency," requires that active Category A and B valves be tested nominally every 3 months, except as provided by paragraphs 4.2.1.2, 4.2.1.5, and 4.2.1.7 of OM-10. (The manual valves and data in Tables 1 and 2 are as provided by the licensee in the relief request.)

2.1 Licensee's Basis for Requesting Relief

All the manual valves in the relief request are in service water, alternate cooling water, fuel pool cooling, reactor building closed cooling water, and instrument air systems. These manual valves are listed in Tables 1 and 2.

The licensee states:

OM-1998 Edition, through OMB-2000 Addenda, Subsection ISTC, paragraph ISTC-3540, permits manual valves to be full stroke exercised at least every 5 years, except where adverse conditions may require the valve to be tested more frequently to ensure operational readiness. Any increased testing shall be specified by the owner. The valve shall exhibit the required change of obturator position. VY proposes to use this imminent Code change at an earlier date to provide a significant reduction in valve cycling that otherwise provides no significant increase to the acceptable level of quality and safety.

The overall population (59 total) of manual valves has shown reliability over at least an 18-month frequency. Currently, 29 of the 59 total valve population tests are deferred tests. Of these 29 valves, 20 are deferred to a refueling outage condition, and 9 are deferred to a cold shutdown condition. More frequent cycling of these valves is not practicable. The remaining 30 valves are currently tested at a quarterly frequency. The environment of these valves is the same as those currently tested once per cycle at refueling or cold shutdown conditions. Of these 30 valves, a five-year maintenance history search revealed no mechanical failures. Therefore, a less frequent test schedule should have no more of an impact than those already tested at a once per cycle (RO) frequency. Any increase in risk due to the relaxed frequency of manual valve testing is insignificant. Therefore, the alternative testing at an overall decreased testing frequency, rather than testing quarterly, provides an acceptable level of quality and safety.

Table 1

Drawing/ Coordinate	Component	Size (inch)	Safety Class	Test	OM-10 Freq	ISTC Freq	OM-10 ROJ/CSJ	Notes
G-191159, Sheet 1								
C-12	V70-32B	2.5	3	SO	Q	OC	n/a	★ 22
C-13	V70-36A	3	3	SO	Q	OC	n/a	★ 22
C-13	V70-36B	3	3	SO	Q	OC	n/a	★ 22
K-13	V70-42A	8	3	SO	Q	OC	n/a	★ 8
B-13	V70-42B	8	3	SO	Q	OC	n/a	★ 8
F-03	V70-6	8	3	SC	Q	OC	n/a	★ 8
J-13	PCV-104-69A	8	3	SO	Q	OC	n/a	★ 8
B-13	PCV-104-69B	8	3	SO	Q	OC	n/a	★ 8
C-05	V70-130A	3	3	SC	Q	OC	n/a	★ 8
I-05	V70-130B	3	3	SC	Q	OC	n/a	★ 8
C-12	V70-24B	2.5	3	SO	Q	OC	n/a	★ 22
D-02	V70-27	1.5	3	SC	Q	OC	n/a	★ 8
D-13	V70-29	3	3	SO	Q	OC	n/a	★ 22
D-13	V70-29A	3	3	SO	Q	OC	n/a	★ 22
G-191159, Sheet 2								
D-08	V70-414	0.75	NNS	SC	Q	OC	n/a	★ 8
B-03	V70-203	1.25	3	SC	Q	OC	n/a	★ 8
G-191159, Sheet 3								
P-02	V70-106	2	3	SC	Q	OC	n/a	★ 8
P-05	V70-107	2	3	SC	Q	OC	n/a	★ 8
N-02	V70-24A	2.5	3	SC	Q	OC	n/a	★ 8
O-10	V70-28A	3	3	SC	Q	OC	n/a	★ 8
P-02	V70-32A	2.5	3	SC	Q	OC	n/a	★ 8
L-4	V70-30A	1	3	SC	Q	OC	n/a	
M-4	V70-31A	1	3	SC	Q	OC	n/a	
M-4	V70-30B	1	3	SC	Q	OC	n/a	
N-4	V70-31B	1	3	SC	Q	OC	n/a	

Table 1 (continued)

Drawing/ Coordinate	Component	Size (inch)	Safety Class	Test	OM-10 Freq	ISTC Freq	OM-10 ROJ/CSJ	Notes
G-191173, Sheet 1								
F-05	V19-37	4	3	SC	Q	OC	n/a	★23
H-05	V19-53	6	3	SC	Q	OC	n/a	★23
	V19-22A	6	3	SC	Q	OC	n/a	★23
	V19-22B	6	3	SC	Q	OC	n/a	★23
G-191237, Sheet 2								
D-04	SCW-65A	0.75	3	SC	Q	OC	n/a	

Table 2

Drawing/ Coordinate	Component	Size	Safety Class	Test	OM-10 Freq	ISTC Freq	OM-10 ROJ/CSJ	Notes
G-191159, Sheet 2								
D-09	SB-70-1	24	NNS	SO/SC	CS	RO	CSJ-V16	★8
D-07	V70-11	14	3	SO/SC	CS	RO	CSJ-V16	★8
D-06	V70-17	20	3	SO	CS	RO	CSJ-V16	★8
E-07	V70-18	20	3	SC	CS	RO	CSJ-V16	★8
G-191160, Sheet 3								
L-15	V72-28A	1	NNS	SC	CS	RO	CSJ-V17	
L-16	V72-28B	1	NNS	SC	CS	RO	CSJ-V17	
K-16	V72-28D	1	NNS	SO	CS	RO	CSJ-V17	
K-16	V72-28E	1	NNS	SO	CS	RO	CSJ-V17	
G-191172								
G-08	V10-17A1	0.5	2	SC	CS	RO	CSJ-V18	

Notes:

- ★ 8 These valves form the Alternate Cooling System boundary alignment and are otherwise included in the IST Program based on a commitment to NRC. Reference OP-2181; NRC Inspection Report 94-03, dated March 4, 1994.
- ★ 22 These manually operated valves are required to close for the alternate cooling mode of the Service Water System. Valves were added per commitment to BMO 97-61.
- ★ 23 This normally closed valve is assigned as part of the Fuel Pool Cooling System. This portion of the system is normally not in service, but is required during refueling operations. Testing is required within 3 months prior to placing this portion of the system in an operable status and shall be exercised at a quarterly frequency while in service (Ref. OM-10, paragraph 4.2.1.7).

2.2 Licensee's Proposed Alternative Testing

The licensee states:

The majority of the manual valves in the IST Program are service water valves that would be considered to be subject to somewhat adverse conditions. Valve maintenance and operation history for these valves lends credibility to an extended test frequency however, a five-year frequency as allowed by OMB-2000, would not be prudent due to the service media. In order to facilitate tracking and scheduling, all manual valves currently in the IST Program will be full stroke exercised on a "once per cycle" frequency. The valves in Table 1 previously scheduled at a quarterly frequency will be moved to a once per cycle frequency. The valves in Table 2 previously scheduled at a cold shutdown frequency will be revised to a refueling frequency. In conjunction with these tests, any failure will be evaluated in accordance with the requirements of the VY IST Program. This evaluation will include analysis to determine corrective action(s), common mode failure, and performance reliability. Performance reliability may require an increased test frequency for the failed components(s).

2.3 Evaluation

Active safety-related valves without power actuators, referred to as manual valves, require a plant operator to turn a hand wheel or other device to actuate the valve to its safety position. All of the valves in this relief request are manual Category B valves. The ASME Code requires that Category B valves be exercised to their safety position once every 3 months. Manual valves are not required to meet the Code stroke time testing requirements. All of the specified manual valves are in the service water, alternate cooling water, fuel pool cooling, reactor building closed cooling water, and instrument air systems, as listed in Tables 1 and 2.

The licensee proposes to exercise the manual valves listed in Table 1 on a once-per-cycle frequency and Table 2 on a refueling outage (RO) basis. Each RO occurs nominally at every 18-month interval. The valves in Table 1, previously scheduled for IST at a quarterly frequency, will be tested at a frequency of once per cycle. The valves in Table 2, previously scheduled for IST at a cold shutdown frequency, will be tested at a frequency consistent with an RO. The licensee states that in addition to these tests, any failure will be evaluated in accordance with the requirements of the VYNPS IST Program. This evaluation will include an analysis to determine corrective action(s), common mode failure, and performance reliability, which may, in turn, require an increase in test frequency for the failed component(s) to ensure operational readiness. The proposed testing results in approximately a 60-percent reduction in the testing of the specified manual valves and, therefore, a corresponding reduction in the burden of testing these valves, while performing an exercise test at a nominal interval of 18 months.

In a proposed rule amending 10 CFR 50.55a, issued in the *Federal Register* on August 3, 2001 (66 FR 40626), the NRC proposed a modification to the ASME Code provisions for manual valves in ASME OMA-1998, paragraph ISTC 3540. The proposed modification in 10 CFR 50.55a(b)(3)(vi) would set the maximum exercise interval for safety-related manual valves at 2 years (instead of 5 years as specified in OMB-2000) unless adverse conditions warranted a shorter exercise interval. The licensee's proposed alternative provides a frequency of once per cycle or every refueling outage for manually exercising these valves to ensure

operational readiness and is conservative with respect to the modification in the proposed rule. Therefore, the licensee's alternative provides an acceptable level of quality and safety.

3.0 CONCLUSION

The NRC staff concludes that the licensee's proposed alternative to the exercise frequency requirements of paragraph 4.2.1.1 (OM-10, 1988 Edition, including 1989 Addenda) for manual valves is authorized pursuant to 10 CFR 50.55a(a)(3)(i) for the third 10-year inservice inspection interval on the basis that the alternative provides an acceptable level of quality and safety.

4.0 REFERENCES

1. Letter from G. Maret, Vermont Yankee Nuclear Power Corporation, to U.S. Nuclear Regulatory Commission, "Revision 19 of Vermont Yankee Nuclear Power Station IST Program Plan," dated November 20, 1998.
2. Letter from Gautam Sen, Vermont Yankee Nuclear Power Corporation, to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Request for Alternative Testing of Manual Valves for Inservice Testing (IST) Program," dated November 20, 2001.
3. Letter from E. G. Adensam, USNRC, to G. Maret, Vermont Yankee Nuclear Power Corporation, "Safety Evaluation of the Inservice Testing Program for Pumps and Valves, Third Interval Plan, Revision 19, Vermont Yankee Nuclear Power Station (TAC No. MA4503)," dated March 12, 1999.

Principal Contributor: G. Bedi

Date: April 23, 2002