Entergy

Entergy Nuclear Vermont Yankee, LLC
Entergy Nuclear Operations, Inc.
185 Old Ferry Road
Brattleboro, VT 05302-0500

October 1, 2003
BVY 03-89

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Supplement 2 to Fourth-Interval Inservice Inspection (ISI) Program Plan - Submittal of Relief Request RI-01

On April 1, 2003, Vermont Yankee Nuclear Power Station (VY) submitted to the NRC a revised Inservice Inspection (ISI) Program[1] as required by 10CFR50.55a(a)(3)(i). The subject submittal contained a number of relief requests for NRC review and approval. The attached Relief Request has also been identified as warranting NRC review and approval. Accordingly, attached for your review and approval in parallel with our Fourth-Interval ISI Program Review is Relief Request RI-01 "Reactor Internals." This submittal requests to implement various BWRVIP Guidelines in lieu of select ASME Section XI requirements.

Attachment 1 identifies the commitments contained within this letter. Attachment 2 contains Relief Request RI-01.

If you have any questions on this transmittal, please contact Mr. Thomas B. Silko at (802) 258-4146.

Sincerely,

James M. DeVincintis
Manager, Licensing

Attachments

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VY
USNRC Project Manager - VY
Vermont Department of Public Service

[1] Reference VY Letter to USNRC, dated April 1, 2003, BVY 03-28, "Fourth-Interval Inservice Inspection Program Plan and Fourth-Interval Inservice Inspection Pressure Test Program and Request for Approval of ISI Relief Requests."

A047

Docket No. 50-271
BVY 03-89

Attachment 1

Vermont Yankee Nuclear Power Station

Supplement 2 to Fourth-Interval Inservice Inspection (ISI) Program Plan –
Submittal of Relief Request RI-01

List of Commitments

SUMMARY OF VERMONT YANKEE COMMITMENTS

BVY NO.: 03-89

The following table identifies commitments made in this document by Vermont Yankee. Any other actions discussed in the submittal represent intended or planned actions by Vermont Yankee. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager of any questions regarding this document or any associated commitments.

COMMITMENT	COMMITTED DATE OR "OUTAGE"
None	N/A

Docket No. 50-271
BVY 03-89

Attachment 2

Vermont Yankee Nuclear Power Station

Supplement 2 to Fourth-Interval Inservice Inspection (ISI) Program Plan – Submittal of Relief Request RI-01

Relief Request RI-01

LICENSEE/UTILITY NAME – Entergy Nuclear Operations, Inc.
PLANT NAME, UNIT – Vermont Yankee
10-YEAR INTERVAL – Fourth Interval
REQUEST FOR RELIEF No. RI-01

Proposed Alternative
In Accordance with 10 CFR 50.55a(a)(3)(i)

-- Alternative Provides Acceptable Level of Quality and Safety --

1. **ASME Code Component(s) Affected**

   ASME Section XI, Class 1, Examination Categories B-N-1 and B-N-2, Code Item Nos. B13.10, Vessel Interior, B13.20, Interior Attachments within Beltline Region, B13.30, Interior Attachments beyond Beltline Region, and B13.40, Core Support Structure

2. **Applicable Code Edition and Addenda**

   1998 Edition with Addenda through 2000

3. **Applicable Code Requirements**

   ASME Section XI requires the examination of components within the Reactor Pressure Vessel. These examinations are included in Table IWB-2500-1 Categories B-N-1 and B-N-2 and identified with the following item numbers:

   B13.10 Examine accessible areas of the reactor vessel interior each period by the VT-3 method.

   B13.20 Examine interior attachment welds within the beltline region each interval by the VT-1 method.

   B13.30 Examine interior attachment welds beyond the beltline region each interval by the VT-3 method.

   B13.40 Examine surfaces of the core support structure each interval by the VT-3 method.

   These examinations are performed to assess the structural integrity of components within the boiling water reactor pressure vessel.

4. **Reason for Request**

   To avoid unnecessary inspections and to conserve radiological dose, while still maintaining an adequate level of quality and safety for examination of the affected welds.

5. **Proposed Alternative**

   In lieu of the requirements of ASME Section XI, 1998 Edition, 2000 Addenda, the proposed alternative described in the enclosure shall be used.

Vermont Yankee will examine components within the reactor vessel in accordance with BWRVIP Guideline requirements. The particular guidelines that are applicable to those components are:

BWRVIP-18 "BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines"
BWRVIP-25 "BWR Core Plate Inspection and Flaw Evaluation Guidelines"
BWRVIP-26 "BWR Top Guide Inspection and Flaw Evaluation Guidelines"
BWRVIP-38 "BWR Shroud Support Inspection and Flaw Evaluation Guidelines"
BWRVIP-41 "BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines"
BWRVIP-47 "BWR Lower Plenum Inspection and Flaw Evaluation Guidelines"
BWRVIP-48 "Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines"
BWRVIP-76 "BWR Core Shroud Inspection and Flaw Evaluation Guidelines"

The attached Table compares present ASME Category B-N-1 and B-N-2 requirements with the above current BWRVIP Guideline requirements applicable to Vermont Yankee.

In addition, the requirements of BWRVIP-94, "Program Implementation Guideline," will be followed. BWRVIP-94 states that where guidance in existing BWRVIP documents has been supplemented or revised by subsequent correspondence approved by the BWRVIP Executive committee, the most current approved guidance will be implemented. Therefore, the attached Table only represents a current comparison.

Basis for Use

BWRs now examine reactor internals in accordance with BWRVIP guidelines. These guidelines have been written to address the safety significant vessel internal components and to examine these components using appropriate methods and reexamination frequencies. The NRC has agreed with the BWRVIP approach in principal and has issued Safety Evaluations for these guidelines (see References below). Therefore, use of these guidelines, as an alternative to the subject Code requirements, provides an acceptable level of quality and safety and will not adversely impact the health and safety of the public.

6. **Duration of Proposed Alternative**

It is proposed to use the alternative for the duration of the Vermont Yankee Fourth Ten-Year Interval (September 1, 2003 through August 31, 2013).

7. **References**

1. Letter USNRC to BWRVIP, dated April 27, 1998, "Final Supplement to the Safety Evaluation of the BWRVIP, BWRVIP-07 Report"
2. Letter USNRC to BWRVIP, dated September 15, 1998, "Safety Evaluation of the BWRVIP, BWRVIP-06 Report"
3. Letter USNRC to BWRVIP, dated September 29, 1999, "Final Safety Evaluation of 'BWRVIP, BWR Top Guide Inspection and Flaw Evaluation Guidelines (BWRVIP-26),' EPRI Report TR-107285, December 1996"
4. Letter USNRC to BWRVIP, dated September 29, 1999, "Final Safety Evaluation of 'BWRVIP, BWR Vessel ID Attachment Weld Inspection and Flaw Evaluation Guidelines (BWRVIP-48),' EPRI Report TR-108724"
5. Letter USNRC to BWRVIP, dated October 6, 1999, "Staff Reevaluation of Table 1 in the BWRVIP-07 Report"

6. Letter USNRC to BWRVIP, dated October 13, 1999, "Final Safety Evaluation of 'BWRVIP, BWR Lower Plenum Inspection and Flaw Evaluation Guidelines (BWRVIP-47),' EPRI Report TR-108727"
7. Letter USNRC to BWRVIP, dated December 2, 1999, "Final Safety Evaluation of BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines (BWRVIP-18)"
8. Letter USNRC to BWRVIP, dated December 19, 1999, "Final Safety Evaluation of BWRVIP, 'BWR Core Plate Inspection and Flaw Evaluation Guidelines (BWRVIP-25)' EPRI Report TR-107284, December 1996"
9. Letter USNRC to BWRVIP, dated July 24, 2000, "Final Safety Evaluation of the 'BWRVIP, BWR Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38),' EPRI Report TR-108823"
10. Letter USNRC to BWRVIP, dated February 4, 2001, "Final Safety Evaluation of the 'BWRVIP, BWR Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)'"
11. Letter USNRC to BWRVIP, dated August 20, 2001, "Final Safety Evaluation of the 'BWRVIP, Shroud Vertical Weld Inspection and Evaluation Guidelines (BWRVIP-63)

Comparison of ASME Category B-N-1 and B-N-2 Requirements With BWRVIP Guidance Requirements

ASME Item No. Table IWB-2500-1	Component	ASME Exam Scope	ASME Exam	ASME Frequency	Applicable BWRVIP Document	BWRVIP Exam Scope	BWRVIP Exam	BWRVIP Frequency
B13.10	Reactor Vessel Interior	Accessible Areas (Non-specific)	VT-3	Each period	BWRVIP-18, 25, 26, 38, 41, 47, 48, 76	Per VY Program Procedure PP 7027 See Attached Table 1		
B13.20	Interior Attachments Within Beltline – Riser Braces	Accessible Welds	VT-1	Each 10-year Interval	BWRVIP-48 Table 3-2	Riser Brace Attachment	EVT-1	100% in first 12 years, 25% during each subsequent 6 years
	Lower Surveillance Specimen Holder Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
B13.30	Interior Attachments Beyond Beltline – Steam Dryer Hold-down Brackets	Accessible Welds	VT-3	Each 10-year Interval	BWRVIP-48 Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Guide Rod Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Steam Dryer Support Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	EVT-1	Each 10-year Interval
	Feedwater Sparger Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	EVT-1	Each 10-year Interval
	Core Spray Piping Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	EVT-1	Every 4 Refueling Cycles
	Upper and Middle Surveillance Specimen Holder Brackets				BWRVIP-48 Table 3-2	Bracket Attachment	VT-3	Each 10-year Interval
	Shroud Support (Weld H9)				BWRVIP-38 3.1.3.2, Figure 3-5	Weld H9	EVT-1 or UT	Maximum of 6 years for EVT-1, Maximum of 10 years for UT
	Shroud Support Legs (H12 Welds)	(Rarely Accessible)			BWRVIP-38 3.2.3	Not Required	Not Required	Not Required
B13.40	Integrally Welded Core Support Structure – Shroud Support	Accessible Surfaces	VT-3	Each 10-year Interval	BWRVIP-38 3.1.3.2, Figure 3-5	Welds H8, H9	EVT-1 or UT	Maximum 6 years for EVT-1, 10 years for UT
	Shroud				BWRVIP-76 2.2.1	Welds H1, H2	EVT-1 or UT	Maximum 10 years
					BWRVIP-76 Figure 3-3	Vertical, Ring Seg. Welds Below H2	EVT-1 or UT	Maximum 6 years for one-sided EVT-1, 10 years for UT
					BWRVIP-76 3.5	Tie-rod Repair	VT-3	All four within 10 years

NOTE: This Table provides only an overview of the requirements. For more details, refer to ASME Section XI, Table IWB-2500-1, and the appropriate BWRVIP document.

Table 1

Outage Year	1995	1996	1998	1999	2001	2002	2004	2005	2007	2008	2010	2011
Reactor Internal Component **Outage**	**RFO18**	**RFO19**	**RFO20**	**RFO21**	**RFO22**	**RFO23**	**RFO24**	**RFO25**	**RFO26**	**RFO27**	**RFO 28**	**RFO29**
Control Rod Drive Guide Tube Body Welds					EVT1 (4)		EVT1 (1)		EVT1	EVT-1 (IN)		
Control Rod Drive Guide Tube Lug and Pin					VT3		VT3	VT3	VT3	VT-3	VT3	
Core Plate Rim Hold-Down Bolts		VT3		VT3 (50%)	VT3 (50%)	VT-3 (50%)	VT-3 (50%)	UT				
Core Shroud Horizontal Welds (H1-H3)	UT						EVT1				EVT1	
Core Shroud Horizontal Welds (H4-H7)	UT											
Core Shroud Vertical Welds		UT/ET					EVT1				EVT1	
Core Shroud TG/CP Ring Segment Welds		UT/ET					EVT1				EVT1	
Core Shroud Flange Ring Segment Welds												
Core Shroud Tie-Rod Repair		VT3 (all)	VT3 (all)	VT3 (all)			VT3 (2)			VT3 (2)		
Core Shroud Support Welds (H8, H9)		UT/ET						UT or EVT1				
Core Shroud Support Access Hole Cover	*VT*	*VT*	*MVT1*	*EVT1*		*EVT1*		*EVT1*		*EVT1*		
Core Shroud Support Annulus Floor	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	*VT3*	
Core Spray Thermal Sleeve Welds (Hidden)								UT				
Core Spray Piping Welds (except P9)	*MVT1*	UT	EVT1	EVT1	EVT1	EVT1	EVT1	EVT1	EVT1	EVT1	EVT1	
Core Spray P9 Welds								UT		UT		UT
Core Spray Sparger Large Circ Welds	CSVT1	CSVT1	MVT1		EVT1		EVT1		EVT1		EVT1	
Core Spray Sparger Nozzle Welds	CSVT1	CSVT1	VT3		VT1 (50%)		VT1 (50%)		VT1 (50%)		VT1 (50%)	
Core Spray Piping Brackets	*MVT1*	*MVT1*				EVT1				EVT1		
Core Spray Sparger Brackets	CSVT1	CSVT1	VT3			VT1		VT1		VT1		
Core Spray Sparger Tee-Box Repair (Old)	*VT3*	*VT3*	*VT3*	*VT3*				*VT3*				
Feedwater Sparger Tee Welds	MVT1		MVT1		VT1		VT1		VT1		VT1	
Feedwater Sparger End Bracket Attachment	MVT1		MVT1		VT1	EVT1	VT1		VT1		VT1	
Feedwater Sparger Piping and Brackets	VT3		VT3		VT3		VT3		VT3		VT3	
Feedwater Nozzle Inner Radii	UT				UT	UT (1)			UT			
Guide Rods						VT3						
Incore Dry Tubes	*MVT1 (3)*			*VT1,3 (2)*			*VT1,3 (2)*	*VT1,3 (5)*	*VT1,3 (5)*	*VT1,3 (5)*	*VT1,3 (5)*	
Integrally Welded Core Support Structures						VT3						
Jet Pump Beams			UT	UT (50%)		UT		UT				
Jet Pump Thermal Sleeve Welds (Hidden)								UT				UT (50%)
Jet Pump Riser Welds (RS-1, RS-2, RS-3)			UT		UT (flaws)		EVT-1 (flaws)		UTorEVT1 (50%)		EVT-1 (flaws)	
Jet Pump Riser Welds (RS-4, RS-5, RS-8)			MVT (50%)				EVT (50%)				EVT (25%)	
Jet Pump Riser Brace Welds	*VT (50%)*	*VT (50%)*	MVT (50%)				EVT (50%)				EVT (25%)	
Jet Pump Inlet Bolted Connection	*VT3 (50%)*	*VT3 (50%)*	VT3 (50%)				VT3 (50%)				VT3 (25%)	
Jet Pump Restrainer Wedges	*VT (50%)*	*VT (50%)*	VT (50%)		*VT1 (50%)*		VT1 (50%)		*VT1 (50%)*		VT1(25%-50%)	
Jet Pump Restrainer Setscrews	*VT (50%)*	*VT (50%)*	*VT (50%)*		*VT3 (50%)*		*VT3 (50%)*		*VT3 (50%)*		*VT3 (50%)*	
Jet Pump Mixer/Diffuser Welds (above shell)				UT (100%)								
Jet Pump Diffuser/Adapter Welds (below shell)				UT (100%)		UT (4 flaws)		EVT-1 (4 flaws)		UT or EVT1 (50%)		
Jet Pump Sensing Lines	*VT (50%)*	*VT (50%)*	*VT (50%)*		*VT3 (50%)*		*VT3 (50%)*		*VT3 (50%)*		*VT3 (50%)*	
Lower Plenum (CRD, Core Shroud Support)	W H E N A C C E S S I B L E											
Lower Plenum (Core Plate, Incore, SLC)	*W H E N A C C E S S I B L E*											
Miscellaneous Vessel Internal Attachments						EVT1,VT1,3						
Orificed Fuel Support Castings	*VT3*	*VT3*	*VT3*									
SLC Nozzle-to-Safe End Weld			EVT2*	EVT2*	EVT2*	PT		UT				

Outage Year / Reactor Internal Component / Outage	1995 RFO18	1996 RFO19	1998 RFO20	1999 RFO21	2001 RFO22	2002 RFO23	2004 RFO24	2005 RFO25	2007 RFO26	2008 RFO27	2010 RFO 28	2011 RFO29
Steam Dryer			*VT3*	*VT3 (flaws)*			*VT3*				*VT3*	
Steam Dryer Support Bracket			VT3,UT-flaw		VT3,UT-flaw							
Steam Separator/Shroud Head			*VT3*				*VT3*				*VT3*	
Steam Separator Hold-down bolts		*VT3*										
Top Guide Aligner Assemblies		*VT3 (2)*		VT1 (2)								
Top Guide Hold-down Assemblies		*VT3 (4)*		VT1 (2)		VT1 (2)		VT1 (2)		VT1 (2)		
Top Guide Bolts (Rim and Cover Plate)					*VT3*				*VT3*			
Top Guide Grid Beams	*VT*	*VT*	MVT1	VT1								
Vessel Cladding		UT (aut)				UT (man)						

Table Key

Standard Print = Inspections mandated by ASME, BWRVIP, or NRC commitments

Italics = Inspections recommended for Risk-to-Generation purposes

UT = Ultrasonic Testing performed or planned

UT (aut or man) = Either automated or manual Ultrasonic Testing

ET = Eddy Current Testing performed or planned

PT = Penetrant Testing performed or planned

VT = Visual Testing performed or planned

EVT1 = EVT-1; Enhanced Visual Test to look for cracking; 1/2 mil wire resolution with cleaning assessment

EVT2* = Enhanced Leakage Inspection (direct view of component during pressure test)

VT1 = VT-1; Visual Test to look for cracks, wear, corrosion, etc.; resolution required: 1/32" black line

VT3 = VT-3; Visual Test to determine general mechanical/structural condition; no resolution requirements

CSVT1 or MVT1 = CSVT-1 or MVT-1; Core Spray Visual Test or Modified VT-1, no longer a defined test method; 1 mil wire resolution

(IN) = If necessary (to complete minimum number of inspections not performed in previous outage)

(all, number, %, or flaw) = Perform inspection on all components, limited number (or percentage) of components, or just flawed components