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December 21, 2010

BVY 10-058

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: License Renewal Application Supplemental Information
Vermont Yankee Nuclear Power Station
Docket No. 50-271
License No. DPR-28

REFERENCES:

1. Letter, Entergy to USNRC, "Vermont Yankee Nuclear Power Station, License No. DPR-28, License Renewal Application," BVY 06-09, dated January 25, 2006

2. Letter, Entergy to USNRC, "License Renewal Application Supplemental Information," BVY 10-050, dated September 3, 2010

Dear Sir or Madam:

On January 25, 2006, Entergy Nuclear Operations, Inc. and Entergy Nuclear Vermont Yankee, LLC (Entergy) submitted the License Renewal Application (LRA) for the Vermont Yankee Nuclear Power Station (VYNPS) as indicated by Reference 1.

In Reference 2, VYNPS expanded the scope of the Non-EQ Inaccessible Medium-Voltage Cable program, Section B.1.17 of the LRA, to include inaccessible low-voltage (480 V to 2kV) cables with a license renewal intended function. Attachment 1 of this letter provides supplemental information to the LRA to address the inspection frequency of manholes and conduits containing in-scope inaccessible low and medium voltage cables. Attachment 1 of this letter also provides supplemental information to address questions discussed with the NRC staff on teleconferences held on November 4, 2010, November 22, 2010 and December 2, 2010.

New regulatory commitments are provided in Attachment 2.

Should you have any questions or require additional information concerning this submittal, please contact Mr. Robert Wanczyk at 802-451-3166.

A117
NRR

I declare under penalty of perjury, that the foregoing is true and correct.

Executed on December 21, 2010.

Sincerely,

[MJC/PLC]

Attachments: 1. License Renewal Application Supplemental Information
2. List of License Renewal Commitments

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Attachment 1

Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)

License Renewal Application

Supplemental Information

Vermont Yankee Nuclear Power Station
License Renewal Application - Supplemental Information

Vermont Yankee Nuclear Power Station (VYNPS) provides the following supplemental information as a result of recent regulatory and industry correspondence potentially relevant to aging management. The information covers the following areas.

1. Neutron-absorbing material
2. One-time inspection of small-bore piping
3. Buried piping
4. Non-EQ inaccessible medium-voltage cables
5. Protective coatings inside containment

Neutron-Absorbing Material

Background

By letter dated October 14, 2010, VYNPS provided information describing proposed actions to manage the age-related degradation of spent fuel pool neutron absorbing materials. VYNPS is providing additional information to describe the aging management program for neutron-absorbing materials, specifically Boral, during the period of extended operation (PEO). The aging program consists of the 10 elements that are described in XI.M40 of LR-ISG-2009-01.

New License Renewal Application (LRA) UFSAR Section A.2.1.37 and Aging Management Program Section B.1.31 are provided as follows.

A.2.1.37 Neutron Absorber Monitoring Program

The Neutron Absorber Monitoring Program is a new program that will manage loss of material and reduction of neutron absorption capacity of Boral neutron absorption panels in the spent fuel racks. The loss of material and the reduction of the neutron-absorbing capacity will be determined through coupon testing, direct in situ testing or both. Such testing will include periodic verification of boron loss through areal density measurement of coupons or through direct in situ techniques, such as measurement of boron areal density, measurement of geometric changes in the material (blistering, pitting and bulging), and detection of gaps through blackness testing.

B.1.31 Neutron Absorber Monitoring Program

Program Description

The Neutron Absorber Monitoring Program is a new program that manages loss of material and reduction of neutron absorption capacity of Boral neutron absorption panels in the spent fuel racks. The program will rely on periodic inspection, testing, monitoring and analysis of the criticality design to assure that the required five percent subcriticality margin is maintained during the period of extended operation.

The program will be initiated prior to the period of extended operation.

LR-ISG-2009-01 Consistency

The Neutron Absorber Monitoring Program at VYNPS will contain the program attributes described in the Monitoring of Neutron-Absorbing Materials Program presented in Appendix C to LR-ISG-2009-01.

Exceptions to LR-ISG-2009-01

None

Enhancements

None

Operating Experience

Three spent fuel pool monitoring coupon strings were installed in the VYNPS spent fuel pool storage racks following the replacement of nine racks in 1989. Each monitoring string consists of eight 304L stainless steel coupons and three Boral coupons. Coupon analysis was performed in 1991 and 1996. In 1996, the coupons in one string were dimensionally measured and weighed. No indication of loss of material was observed. Also in 1996, the last Boral coupon in the string exhibited blistering on the bottom side surface of the coupon. This was determined to be cosmetic in nature.

There is no VYNPS operating experience with this new program; however, relevant plant and industry operating experience is presented above and described in LR-ISG-2009-01. This and any future relevant operating experience will be considered during implementation of this program.

Conclusion

The Neutron Absorber Monitoring Program is a new program that will incorporate proven monitoring techniques, acceptance criteria, corrective actions and administrative controls. The Neutron Absorber Monitoring Program will provide reasonable assurance that the effects of aging will be managed such that the components will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

Commitment #52 is revised as follows. Deleted text is shown as strikethrough and added text is underlined.

Commitment #52

Implement the Neutron Absorber Monitoring Program as described in LRA Section B.1.31.

~~The loss of material and the degradation of the neutron-absorbing capacity of Boral will be determined through coupon and/or direct in situ testing. Such testing will include periodic verification of boron loss through areal density measurement of coupons or through direct in situ techniques which may include measurement of boron areal density, geometric changes in the material (blistering, pitting, and bulging), and detection of gaps through blackness testing. Acceptance criteria will be that measured or analyzed neutron absorbing capacity required to ensure 5% subcriticality margin for the spent fuel pool is maintained, assuming neutron-absorber degradation as the applicable aging effect.~~

~~Results not meeting the acceptance criteria will be entered into the VYNPS corrective action program for disposition. Testing will be performed at least once every 10 years during the PEO.~~

One-Time Inspection of Small-Bore Piping

Background

By letter dated October 14, 2010, VYNPS provided supplemental information to LRA Section B.1.21, "One-Time Inspection Program." The letter stated that VYNPS would revise the program to periodically inspect Class 1 small-bore piping socket welds using volumetric examinations. The sample size would be three welds per Inservice Inspection (ISI) Program interval during the period of extended operation (PEO). In addition, one weld would be inspected prior to the PEO. The inspection volume was to be in accordance with guidelines established in MRP-146 which recommends examination of the base metal ½ inch beyond the toe of the weld.

Based on recent industry correspondence, VYNPS is providing additional information to 1) justify the use of a one-time inspection program based on plant operating experience (OE) related to Class 1 small-bore piping socket and butt welds, 2) revise the proposed inspection frequency and sampling method, and 3) clarify the proposed examination volume.

A review of VYNPS OE related to Class 1 small-bore piping indicated that socket welds in piping less than 4 inches nominal pipe size (NPS 4) and greater than or equal to NPS 1 have not experienced cracking that was the result of aging or high cycle fatigue.

VYNPS experienced cracking on recirculation system piping instrument line socket welds in the early 1980s. The cracking was due to chlorides in insulation and the resulting Inter-Granular Stress Corrosion Cracking (IGSCC). These socket welds and instrument lines were replaced in the mid 1980s when the reactor recirculation piping was changed. The affected fittings and those of similar design were replaced with fittings using material that is less susceptible to IGSCC.

VYNPS has no program that requires periodic volumetric examinations of Class I small-bore butt welds for piping less than NPS 4. A review of OE indicated that no in-scope butt weld failures have occurred due to aging or high cycle fatigue.

VYNPS will examine 10% of the Safety Class 1 weld population from 1 up to but not including 4 inch NPS with a maximum of 25 welds of each weld type. The inspection will be volumetric, using demonstrated ultrasonic (UT) techniques capable of examining both the weld and base metal. In lieu of this volumetric examination for socket welds, a destructive examination may be performed. Each destructive exam will be equivalent to two UT examinations when determining the number of completed inspections. The sample size will be based on OE, susceptibility, inspectability, dose considerations, and limiting locations. Examinations will be completed by December 2016.

Commitment

Commitment #53 is revised as follows. Added text is underlined; deleted text is shown as strikethrough.

Commitment #53

During the period of extended operation, VYNPS will perform periodic volumetric examinations of small-bore Class 1 socket and butt welds. The examinations will include 10% of the Class 1 weld population greater than or equal to 1 and less than 4 inch NPS range up to a total of 25 welds of each weld type. In lieu of a volumetric examination for socket welds, a destructive examination may be performed. Each destructive exam will be equivalent to two ultrasonic examinations when determining the number of completed inspections. ~~Three Class 1 socket welds will receive volumetric examination during each 10-year ISI interval. One Class 1 socket weld will be examined before the period of extended operation.~~ The examination method will be a volumetric examination of the base and weld metal ~~½" beyond the toe of the socket fillet weld which allows for the~~ usinge a~~of qualified~~ demonstrated ultrasonic examination technique.~~s as close as possible to the fillet weld~~. Inspection results will determine the need for additional or periodic examinations. The examinations will be performed by December 2016.~~V consistent with the guidelines for volumetric examination ½" beyond the toe of the weld as established in MRP-146, "Materials Reliability Program: Management of Thermal Fatigue in Normally Stagnant Non-isolable Reactor Coolant System Branch Lines."~~

Buried Piping

Background

During a teleconference on November 4, 2010, the NRC staff requested additional information regarding the response provided in Reference 1 on the Buried Piping Inspection Program at VYNPS. In response to this request, the following additional information is provided.

The OE for underground (trenched) piping within the scope of license renewal since the LRA was submitted has shown that no age-related failures have occurred. Direct visual inspections of all in-scope underground (trenched) piping were performed in the service water pipe trenches in January 2008 and the condensate storage tank pipe trench in November 2010. There was no evidence of corrosion or leakage noted. In-scope underground (trenched) piping consists of emergency core cooling system (ECCS) suction stainless steel piping connected to the condensate storage tank and service water system carbon steel piping that supports the alternate cooling system function.

VYNPS reviewed OE for in-scope buried piping since the LRA submittal. As discussed in Reference 1, the service water, fuel oil and fire protection piping coating and piping itself were inspected and found in good condition with no indications of loss of material. The extent of the examinations of the service water and fire protection system piping performed in the past seven years is as follows.

- Service water, September 2003 - approximately 6 feet
- Fire protection and service water (2 lines), July 2007 - approximately 8 feet on each system

During these piping examinations, the backfill was found consistent with the description provided in the previous response. It did not contain debris or large rocks that could damage the coating.

Non-visual inspection methods, if used in the future for buried piping, will be capable of detecting both general and pitting corrosion and will be qualified methods with demonstrated capability.

No direct measurements of VYNPS soil resistivity are available, but past OE provided in Reference 1 provides some indication of low soil corrosiveness. VYNPS will measure the soil resistivity near buried piping prior to the PEO.

Commitment #54 is revised as follows. Deleted text is shown as strikethrough and added text is underlined.

Commitment # 54

Prior to the PEO, VYNPS will inspect a portion of the standby gas treatment system buried piping. The inspection will consist of direct visual examination of a minimum of two sections of piping and cover the entire circumference of at least ten linear feet of piping in each section. ~~The inspection will be a combination of direct visual and non-visual methods that will examine a minimum of 2% of the total linear feet of the system buried piping. Direct visual inspections following excavation are expected to cover the entire circumference of at least ten linear feet of piping.~~

During the PEO, inspections of four carbon steel piping segments of in-scope systems will be performed every 10 years if measured soil resistivity is > 20,000 ohm-cm. If the soil resistivity is < 20,000 ohm-cm, VYNPS will inspect six carbon steel piping segments every 10 years. Each of these direct visual inspections following excavation is expected to cover the entire circumference of at least ten linear feet of piping.

Section A.2.1.1 of Appendix A to the VYNPS LRA is modified as shown below. Deleted text is shown as strikethrough and added text is underlined.

A.2.1.1 Buried Piping Inspection Program

The Buried Piping Inspection Program includes (a) preventive measures to mitigate corrosion and (b) inspections to manage the effects of corrosion on the pressure-retaining capability of buried carbon steel, stainless steel, and gray cast iron piping components. Preventive measures are in accordance with standard industry practice for maintaining external coatings and wrappings. Buried components are inspected when excavated during maintenance. ~~During the PEO inspections of four carbon steel piping segments of in-scope systems will be performed every 10 years. Each of these direct visual inspections following excavation is expected to cover the entire circumference of at least ten linear feet of Piping.~~ During the PEO, inspections will be based on the resistivity of the soil. If the measured resistivity is > 20,000 ohm-cm, VYNPS will inspect four carbon steel piping segments of in-scope systems every 10 years. If the resistivity is < 20,000 ohm-cm, VYNPS will inspect six carbon steel piping segments of in-scope systems every 10 years. Each of these direct visual inspections following excavation is expected to cover the entire circumference of at least ten linear feet of piping. If trending within the corrective action program identifies susceptible locations, the areas with a history of corrosion problems are evaluated for the need for additional inspection, alternate coating, or replacement.

Non-EQ Inaccessible Medium-Voltage Cables

Background

By letter dated September 3, 2010, VYNPS provided supplemental information to enhance the aging management program for non-EQ inaccessible medium-voltage cables. Due to recent industry correspondence, VYNPS is providing the following information enhancing its aging

management program for non-EQ inaccessible medium voltage cables to expand the voltage range defining low-voltage cables (400 V to 2 kV); increase the inspection and testing frequencies of non-EQ inaccessible cables; and describe how relevant OE is used to assure program effectiveness.

VYNPS OE since September 3, 2010 until December 7, 2010 was researched in the Corrective Action Program database. VYNPS has experienced no age-related failures of inaccessible low-voltage (400 V to 2 kV) or medium-voltage cables with a license renewal intended function. VYNPS has no low-voltage cables with a license renewal intended function within the 400 V to 480 V range that are inaccessible.

In November 2009, VYNPS discovered cables in manholes that were submerged in water. Corrective actions were put in place to monitor manholes containing cables and remove water as necessary.

LRA Sections A.2.1.19 and B.1.17 are revised to augment the inspection and testing frequencies of non-EQ inaccessible cables. The changes are presented as strikeout text deleted, and underlined text added.

A.2.1.19 Non-EQ Inaccessible Medium-Voltage Cable Program

In the Non-EQ Inaccessible Medium-Voltage Cable Program, ~~in-scope~~ medium-voltage cables with a license renewal intended function that are~~, not designed for, but~~ exposed to significant moisture are tested at least once every six~~ten~~ years to provide an indication of the condition of the conductor insulation. The specific test performed is a proven test for detecting deterioration of the insulation system due to wetting, such as power factor, partial discharge, polarization index, or other testing that is state-of-the-art at the time the test is performed. Significant moisture is defined as periodic exposures that last more than a few days.

Inspections for water collection in cable manholes ~~and conduit~~ containing ~~in-scope~~ inaccessible low-voltage and medium-voltage cables with a license renewal intended function will occur at least once every ~~two~~ years. Additional condition-based inspections of these manholes will be performed based on: a) potentially high water table conditions, as indicated by high river level, and b) after periods of heavy rain. The inspection results are expected to indicate whether the inspection frequency should be modified.

Inaccessible low-voltage cables (cables with operating voltage from 400~~480~~ V to 2 kV) with a license renewal intended function are included in this program. Inaccessible low-voltage cables will be tested for degradation of the cable insulation prior to the period of extended operation and at least once every six~~10~~ years thereafter. A proven, commercially available test will be used for detecting deterioration of the insulation system for inaccessible low-voltage cables potentially exposed to significant moisture.

B.1.17 Non-EQ Inaccessible Medium-Voltage Cable
Program Description

The Non-EQ Inaccessible Medium-Voltage Cable Program at VYNPS will be based on and consistent with the program described in NUREG-1801, Section XI.E3, Inaccessible Medium-voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements.

VYNPS inspection for water accumulation in manholes is conducted in accordance with a plant procedure. An evaluation per the Corrective Action Process will be used to determine the need to revise manhole inspection frequency based on inspection results.

Medium-voltage cables include cables with operating voltage level from 2kV to 35kV. Low-voltage cables include cables with operating voltage ranging from 400~~480~~ V to 2 kV.

In this program, periodic actions will be taken to prevent cables from being exposed to significant moisture, such as inspecting for water collection in cable manholes and conduit, and ~~draining~~ removing water, as needed. In scope medium-voltage cables exposed to significant moisture will be tested to provide an indication of the condition of the conductor insulation. The specific type of test to be performed will be determined prior to the initial test and is to be a proven test for detecting deterioration of the insulation system due to wetting as described in EPRI TR-103834-P1-2, or other testing that is state-of-the-art at the time the test is performed.

Inaccessible low-voltage cables (cables with operating voltage from 400~~480~~ V to 2 kV) with a license renewal intended function are included in this program. Inaccessible low-voltage cables will be tested for degradation of the cable insulation prior to the period of extended operation and at least once every six~~10~~ years thereafter. A proven, commercially available test will be used for detecting deterioration of the insulation system for inaccessible low-voltage cables potentially exposed to significant moisture.

The program will be initiated prior to the period of extended operation.

NUREG-1801 Consistency

The program attributes of the Non-EQ Inaccessible Medium-Voltage Cable Program at VYNPS will be consistent with the program attributes described in NUREG-1801, Section XI.E3, Inaccessible Medium-Voltage Cables Not Subject To 10 CFR 50.49 Environmental Qualification Requirements.

Exceptions to NUREG-1801

None.

Enhancements

This program includes inaccessible low-voltage cables (400~~480~~ V to 2 kV) with a license renewal intended function.

Operating Experience

This program is a new aging management program based on the program description in NUREG-1801, which in turn is based on relevant industry operating experience. As such, this program will provide reasonable assurance that effects of aging will be managed such that applicable components will continue to perform their intended functions consistent with the current licensing basis for the period of extended operation. ~~As additional operating experience is obtained, lessons learned can be used to adjust the program, as needed.~~

In response to Generic Letter 2007-01, VYNPS identified no age-related failures of non-EQ inaccessible low and medium-voltage cables with a license renewal intended function.

Consideration of ongoing industry and plant-specific operating experience will be used to evaluate the effectiveness of the program. VYNPS will increase the frequency of its inspection and testing if adverse conditions are identified during future inspections (e.g., significant moisture accumulation that could lead to water intrusion or cable insulation degradation).

Commitment

Commitment #13 is revised to augment the aging management program for Non-EQ Inaccessible Medium-Voltage Cables (underlined text is added, strikethrough text is deleted):

Commitment #13

Implement the Non-EQ Inaccessible Medium-Voltage Cable Program as described in LRA Section B.1.17.

Inspections for water accumulation in manholes containing ~~in-scope~~ inaccessible low-voltage and medium-voltage cables with a license renewal intended function will be performed at least once every ~~two~~ years. Additional condition-based inspections of these manholes will be performed based on: a) potentially high water table conditions, as indicated by high river level, and b) after periods of heavy rain. The inspection results are expected to indicate whether the inspection frequency should be modified.

Inaccessible low-voltage cables (400~~480~~ V to 2 kV) ~~that are subject to aging management review~~ with a license renewal intended function are included in this program. Inaccessible low-voltage cables will be tested for degradation of the cable insulation prior to the period of extended operation and at least once every six~~10~~ years thereafter. A proven, commercially available test will be used for detecting deterioration due to wetting of the insulation system for inaccessible low-voltage cables.

Aging Management of Protective Coatings Inside Containment

Background

In Appendix B of the LRA, on page B-10, line item XI.S8 states that the NUREG-1801 program is not applicable to VYNPS. However, VYNPS is providing a new aging management program to provide reasonable assurance that there is proper management of the protective coatings inside primary containment, such that they will not degrade and become a debris source that may challenge ECCS performance during the PEO.

New LRA UFSAR Section A.2.1.38 is provided as follows.

A.2.1.38 Protective Coating Monitoring and Maintenance Program

The Protective Coating Program manages the effects of aging on Service Level I coatings inside containment by means of periodic visual inspections. The program also includes direction to select and review the suitability of the coatings applied to surfaces inside containment (e.g., steel liner, steel containment shell, structural steel, supports, penetrations, and concrete walls and floors).

New LRA Section B.1.32 is provided as follows.

B.1.32 Protective Coating Program

Program Description

The Protective Coating Program is the program described in NUREG-1801, Section XI.S8, Protective Coating Monitoring and Maintenance Program.

The Protective Coating Program manages the effects of aging on Service Level I coatings inside containment. The program also includes direction to select and review the suitability of the coatings applied to surfaces inside containment (e.g., steel liner, steel containment shell, structural steel, supports, penetrations, and concrete walls and floors).

Service Level I protective coatings are not credited to manage the effects of aging, however, proper maintenance of protective coatings inside containment is essential to ensure operability of post-accident safety systems that rely on water recycled through the containment. The proper monitoring and maintenance of Level I coatings ensures there is no coating degradation that would impact safety functions.

NUREG-1801 Consistency

The Protective Coating Program at VYNPS will be consistent with the program described in NUREG-1801, Section XI.S8, Protective Coating Monitoring and Maintenance Program.

Exceptions to NUREG-1801

There are no exceptions to NUREG-1801 XI.S8.

Enhancements

1. Enhance the Protective Coating Program by clearly defining qualifications for inspection personnel, the inspection coordinator, and the inspection results evaluator, as defined by ASTM D 5163-08 and for inspection to include a thorough visual inspection on all coatings near sumps or screens associated with the Emergency Core Cooling Systems (ECCS).

2. Enhance the Protective Coating Program by clearly identifying the instruments and equipment required for the inspection which include but may not be limited to flashlights, mirrors, measuring instruments, magnifiers, cameras and binoculars.

   Element affected: Detection of Aging Effects

3 Enhance the Protective Coating Program to specify that the coating inspector conduct a pre-inspection review of the previous two monitoring reports. Also, revise the program to specify that the inspection report prioritize the repair areas as either needing repair during the same outage or as acceptable to postpone to future outages with appropriate surveillance in the interim period.

   Element affected: Monitoring and Trending

4. Enhance the program to specify the acceptance criteria in accordance with ASTM D 5163-08 and to specify an evaluation of the inspection reports by the responsible coating evaluator who prepares a summary of findings and recommendations for future surveillance or repair.

   Element affected: Acceptance Criteria

Operating Experience

1. The torus vapor space topcoat is a phenolic resin paint. As early as 1972, there were problems with the topcoat blistering and cracking. This condition was attributed to a "dry spray" condition on the surface of the primer in various places. Early on, the remedy was to scrape off the loose cracked and blistered topcoat and to recoat the areas. Later on, the accepted repair was to scrape off the loose topcoat and not to recoat the inorganic zinc primer. This approach has been followed up to present and is the recommended repair to observed peeling or flaking of topcoat. During the 1998 refueling outage, the lower torus shell surface was blasted and recoated from one foot above the waterline and included all submerged carbon steel surfaces. The steel was coated with a coating Service Level I, design basis accident qualified, inorganic zinc-rich coating which was not top coated, except for a band approximately one foot above and below the water line.

2. An inspection of the internal surfaces of the torus was conducted during May of 2010. The coating condition on the inspected components below the waterline was excellent. It was noted that the coated surfaces of the columns and downcomers exhibited little to no coating damage or degradation. The condition of the coating on the immersed sections of the shell plates was in excellent condition. Small amounts of delamination of the topcoat were noted within the belly band region; however the coating adjacent to the exposed primer was tightly bonded. One location was identified within the torus that required coating repair due to the discovery of foreign material (tape) beneath the coating surface. That location was below the waterline on Shell Plate 4 in Bay 5. The foreign material was removed and the coating in this area was repaired.

3. An inspection of primary containment was performed in May 2010 to identify areas in the VYNPS drywell having apparent degraded coatings. Degraded coatings on structures, systems, and components (SSCs) were identified along with an approximate surface area estimate. The results of the coatings inspection indicated that higher elevations of the drywell have experienced more loss of the topcoat than other areas. However the underlying base coat was still present. This condition is attributed to the higher temperatures in the upper elevations of the drywell. These conditions were documented and evaluated. The evaluation determined that the amount of topcoat loss identified did not threaten performance of the ECCS strainers.

Conclusion

The VYNPS Protective Coating Program provides reasonable assurance that the effects of aging on Service Level 1 coatings will be managed such that they can continue to perform their intended functions consistent with the current licensing basis for the period of extended operation.

Commitment

VYNPS is providing the following commitment (Commitment # 55) for the inspection of protective coatings inside containment to be implemented prior to the PEO.

Commitment #55

Enhance safety-related coatings programs and procedures to be consistent with the recommendations of NUREG-1801, Section XI.S8, Protective Coating Monitoring and Maintenance Program.

References:

1. Letter, Entergy to USNRC, "License Renewal Application Supplemental Information," BVY 10-052, dated October 14, 2010

2. Letter, Entergy to USNRC, "License Renewal Application Supplemental Information," BVY 10-050, dated September 3, 2010

Attachment 2

Vermont Yankee Nuclear Power Station
License No. DPR-28 (Docket No. 50-271)

List of License Renewal Commitments

VERMONT YANKEE NUCLEAR POWER STATION
LIST OF LICENSE RENEWAL COMMITMENTS

During the development and review of the Vermont Yankee Nuclear Power Station License Renewal Application, Entergy made commitments to provide aging management programs to manage the effects of aging on structures and components during the extended period of operation. The following table lists the new and revised license renewal commitments made in this submittal, along with the implementation schedule and the source of the commitment.

ITEM	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	Related LRA Section No./ Comments
13	Implement the Non-EQ Inaccessible Medium-Voltage Cable Program as described in LRA Section B.1.17. Inspections for water accumulation in manholes containing inaccessible low-voltage and medium-voltage cables with a license renewal intended function will be performed at least once every year. Additional condition-based inspections of these manholes will be performed based on: a) potentially high water table conditions, as indicated by high river level, and b) after periods of heavy rain. The inspection results are expected to indicate whether the inspection frequency should be modified. Inaccessible low-voltage cables (400 V to 2 kV) with a license renewal intended function are included in this program. Inaccessible low-voltage cables will be tested for degradation of the cable insulation prior to the period of extended operation and at least once every six years thereafter. A proven, commercially available test will be used for detecting deterioration due to wetting of the insulation system for inaccessible low-voltage cables.	March 21, 2012	BVY 06-009 BVY 10-050 BVY 10-058	B.1.17
52	Implement the Neutron Absorber Monitoring Program as described in LRA Section B.1.31.	March 21, 2012	BVY 10-052 BVY 10-058	B.1.31 Audit Report dated 9/3/10

VERMONT YANKEE NUCLEAR POWER STATION
LIST OF LICENSE RENEWAL COMMITMENTS

ITEM	COMMITMENT	IMPLEMENTATION SCHEDULE	SOURCE	Related LRA Section No./ Comments
53	During the period of extended operation, VYNPS will perform periodic volumetric examinations of small-bore Class 1 socket and butt welds. The examinations will include 10% of the Class 1 weld population greater than or equal to 1 and less than 4 inch NPS up to a total of 25 welds of each weld type. In lieu of a volumetric examination for socket welds, a destructive examination may be performed. Each destructive exam will be equivalent to two ultrasonic examinations when determining the number of completed inspections. The examination method will be a volumetric examination of the base and weld metal using a demonstrated ultrasonic examination technique. Inspection results will determine the need for additional or periodic examinations. The examinations will be performed by December 2016.	March 21, 2012	BVY 10-052 BVY 10-058	B.1.21 Audit Report dated 9/3/10
54	Prior to the PEO, VYNPS will inspect a portion of the standby gas treatment system buried piping. The inspection will consist of direct visual examination of a minimum of two sections of piping and cover the entire circumference of at least ten linear feet of piping in each section. During the PEO, inspections of four carbon steel piping segments of in-scope systems will be performed every 10 years if measured soil resistivity is > 20,000 ohm-cm. If the soil resistivity is < 20,000 ohm-cm, VYNPS will inspect six carbon steel piping segments every 10 years. Each of these direct visual inspections following excavation is expected to cover the entire circumference of at least ten linear feet of piping.	March 21, 2012	BVY 10-052 BVY 10-058	A.2.1.1, A.2.1.32 B.1.1 Audit Report dated 9/3/10
55	Enhance safety-related coatings programs and procedures to be consistent with the recommendations of NUREG-1801, Section XI.S8, Protective Coating Monitoring and Maintenance Program.	March 21, 2012	BVY 10-058	B.1.32