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August 16, 2007
Docket No. 50-271
BVY 07-058
TAC No. MC 9668

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

Reference:
1. Letter, Entergy to USNRC, "Vermont Yankee Nuclear Power Station, License No. DPR-28, License Renewal Application," BVY 06-009, dated January 25, 2006.
2. Letter, USNRC to Entergy, "Safety Evaluation Report with Confirmatory Items Related to the License Renewal of Vermont Yankee Nuclear Power Station," NVY 07-036, dated March 30. 2007.
3. Letter, Entergy to USNRC, "Vermont Yankee Nuclear Power Station, License No. DPR-28, License Renewal Application Amendment 28", BVY 07-054, dated July 30, 2007.

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
License Renewal Application, Amendment 29

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. This letter contains an attachment to clarify various information and tables provided in BVY 07-054, LRA Amendment 28 as indicated by Reference 3.

Should you have any questions concerning this letter, please contact Mr. Dave Mannai at (802) 258-5422.

I declare under penalty of perjury that the foregoing is true and correct, executed on August 16, 2007.

Sincerely,

Ted A. Sullivan
Site Vice President
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cc: See next page
enc: Attachment 1

A117

MRR

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Attachment 1

Vermont Yankee Nuclear Power Station

License Renewal Application

Amendment 29

Amendment 28 Clarification

VERMONT YANKEE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION SUPPLEMENT
ATTACHMENT 1

The following supplemental information clarifies information provided in VYNPS LRA Amendment 28, submitted by Entergy on July 30, 2007.

Use of the Water Chemistry Control – BWR Program as an aging management program (AMP) for components exposed to steam or water in the nonsafety-related air evacuation (AE) and augmented off gas (AOG) systems

The Water Chemistry Control – BWR Program is an appropriate AMP for these components, since in each case the source of the steam or water is the auxiliary steam and condensate systems which are monitored by the Water Chemistry Control – BWR Program. Safety classification of a system or component has no bearing on the chemistry control program that is credited. In addition, the One-Time Inspection Program will verify the effectiveness of the Water Chemistry Control – BWR Program by inspecting a representative sample of each unique material and environment combination covered by the program to confirm that unacceptable loss of material is not occurring.

Use of the Flow-Accelerated Corrosion Program as an AMP for carbon steel steam traps and tubing exposed to steam in the auxiliary steam (AS) system.

The Flow-Accelerated Corrosion (FAC) Program is an appropriate AMP for carbon steel steam traps, since these components include a flow path for two-phase or single-phase high-energy fluid > 2% of plant operating time.

The FAC Program is also an appropriate AMP for 1" and 2" carbon steel tubing in the AS system associated with the steam jet air ejector which includes a flow path for two-phase or single-phase high-energy fluid > 2% of plant operating time. (The steam jet air ejector is listed as a "heat exchanger" in Tables 2.3.3-13-45 and 3.3.2-13-45.) This tubing is included in the VYNPS FAC Program because industry experience indicated this location is potentially susceptible to flow-accelerated corrosion. The VYNPS program includes provisions for ultrasonic inspection to monitor wall thinning and provisions to replace the tubing prior to loss of intended function.

Loss of material on interior surfaces of the steam traps and tubing is also managed by the Water Chemistry Control – BWR Program. In addition, the One-Time Inspection Program will verify the effectiveness of the Water Chemistry Control – BWR Program by inspecting a representative sample of each unique material and environment combination covered by the program to confirm that unacceptable loss of material is not occurring.

Information deleted by the submittal of July 30, 2007.

a. Wording that limited inclusion of components in the turbine building to specific areas was deleted from Table 2.3.3.13-B "Description of Nonsafety-Related System Components Subject to Aging Management Review Based on 10 CFR 54.4(a)(2) for Physical Interactions". Previously excluded components in the turbine building are now included. Additional language was included to explain the added scope of systems and components included for 10 CFR 54.4(a)(2)

potential physical interaction required as a result of the June 4, 2007, report of the Region I inspection.

b. Further review of air compressor housings in the diesel generator (DG) and instrument air (IA) systems which were included in scope for potential spatial interaction revealed that liquid is not present in the compression chambers and associated piping. Therefore, there is no potential for spatial interaction with safety-related components, and these line items were deleted from LRA Tables 2.3.3-13-10, 2.3.3-13-22, 3.3.2-13-10, and 3.3.2-13-22.

c. LRA Table 2.3.3-13-21 was revised to replace "heat exchanger (tubes)" with "heat exchanger (shell)" for the heating, ventilation, and air conditioning (HVAC) system since the line item is intended to represent the shell which may be a threat for spatial interaction with safety-related SSCs. The tubes are not a threat since they are enclosed by the shell.

Application of TLAA – metal fatigue for expansion joints and filter housings.

This is appropriate and consistent with revisions to LRA Section 3.4.2.2.1 submitted in LRA Amendment 11 dated August 22 2006. This LRA Section, entitled "Cumulative Fatigue Damage," was revised to state the following.

> "Where identified as an aging effect requiring management ***for components designed to ASME Code requirements,*** the analysis of fatigue is a TLAA as defined in 10 CFR 54.3. TLAAs are evaluated in accordance with 10 CFR 54.21(c). Evaluation of this TLAA is addressed in Section 4.3."

Since LRA Section 4.3.2.2 evaluates the fatigue TLAA for ASME B31.1 Code piping systems, application of TLAA-metal fatigue is appropriate for these components.

Clarification of footnote provided with the LRA Table 2.3.3-13-XX series.

This footnote is an indication that each table may contain component types with an intended function of providing structural/seismic support as well as an intended function of pressure boundary to prevent spatial interaction.

Additional description of systems added to the scope of license renewal.

The following systems are within the scope of license renewal based on the criterion of 10 CFR 54.4(a)(2) for physical interactions and are not described elsewhere in the application. Each system has the following intended function.

- *Maintain integrity of nonsafety-related components such that no physical interaction with safety-related components could prevent satisfactory accomplishment of a safety function. As applicable, this includes the structural/seismic support function for components outside the safety class pressure boundary.*

HD & HV Instruments

The purpose of the heater drain and heater vent instruments system is to provide

indication, alarm, and control functions for associated systems (heater drains and heater vents). There is no SAR reference for this system.

Air Evacuation

The purpose of the air evacuation system is to evacuate gases from the main turbine and main condenser during startup and maintain them free of noncondensible gases during operation. This system is discussed in SAR Section 11.4.

Building (drainage system components)

The building system includes floor drains and the site sewers. This system classification also includes buildings and structures which are evaluated in Section 2.4 of this LRA. The purpose of the drainage systems is to remove operational waste fluids from their points of origin in a controlled manner and to deliver them to a suitable disposal system. Floor drainage systems are discussed in SAR Section 10.16.

Circulating Water Priming

The purpose of the circulating water priming system is to provide for air evacuation from the discharge side of the main condenser. The system ensures that air will not hinder circulating water flow by collecting in the upper portions of the condenser water boxes or in the upper portion of the circulating water discharge piping. This system is discussed in SAR Section 11.6.3.

Extraction Steam

The purpose of the extraction steam system is to supply steam to the shell side of various feedwater heaters for condensate and feedwater heating. Extraction steam is piped from the main turbine casing and cross-around piping to the shells of two parallel strings of reactor feedwater heaters. This system is discussed in SAR Section 11.5.4.3.

Heater Drain

The purpose of the heater drain system is to provide proper level and control for the moisture separator and feedwater heaters by providing drain capability to the main condenser. Condensate drainage from the drain coolers of each feedwater heater flows to the next lower pressure heater by means of pressure differential between successive heaters. Condensate flow may be aided by a heater drain pump between the two lowest pressure heaters in each string. This system is discussed in SAR Section 11.8.3.2.

Heater Vent

The purpose of the heater vent system is to provide for venting of non-condensable

gases back to the main condenser. There is no SAR reference for this system.

Hydrogen Water Chemistry

The purpose of the hydrogen water chemistry (HWC) system is to mitigate the chemical conditions that allow IGSCC in the recirculation piping and reactor vessel internals. The HWC system injects hydrogen into the reactor feedwater at the suction of the feedwater pumps. This system is discussed in SAR Section 4.2.5, 11.8.3.1 and K.4.7.

Make-up Demineralizer

The purpose of the make-up demineralizer (MUD) system is to provide a supply of treated water that may be used as makeup for the station and reactor cycles. The MUD system consists of one train that consists of a cation, anion, and a mixed bed ion exchanger. This system is discussed in SAR Section 10.13.

Seal Oil

The purpose of the seal oil system is to provide shaft sealing for the main generator. This system is mentioned in SAR Section 11.2.3.

Turbine Building Closed Cooling Water

The purpose of the turbine building closed cooling water (TBCCW) system is to supply demineralized water to cool various nonsafety-related auxiliary equipment located in the turbine building in support of power generation. The system consists of two pumps, two 100% capacity heat exchangers and the necessary controls, piping, and instrumentation. Station service water provides the cooling medium for the TBCCW heat exchangers, however it is automatically isolated if service water pressure drops to a preset value which could occur under a condition of concurrent loss-of-coolant accident and loss of off-site power. No essential equipment is cooled by the TBCCW system. This system is discussed in SAR Section 10.10.

Main Turbine Generator

The purpose of the main turbine generator system is to convert the thermodynamic energy of steam into electrical energy for use on the transmission network and the station auxiliary busses. This system is discussed in SAR Section 11.2.

Turbine Lube Oil

The purpose of the turbine lube oil system is to provide lube oil for lubrication of the main turbine. This system is mentioned in SAR Section 11.2.3.

VYNPS license renewal commitment # 34 requires implementation of the Bolting Integrity Program, with details provided in LRA Amendments 16 and 23.

Information provided in Amendment 28 does not invalidate commitment # 34. The System Walkdown Program is used to manage loss of material in carbon steel bolting by visual inspections that are performed at least once per refueling cycle. For stainless steel components such as bolting in a dry indoor air environment there are no aging effects requiring management. This is consistent with the EPRI Mechanical Tools. As such the stainless steel bolting line items have no aging effects or aging management program assigned. However, VYNPS is committing (license renewal commitment # 34) to a Bolting Integrity Program consistent with GALL AMP XI.M18, "Bolting Integrity." This program applies to bolting and torquing practices of safety-related and nonsafety-related carbon and stainless steel bolting for pressure-retaining components, NSSS component supports, and structural joints. The program addresses all safety and nonsafety-related bolting regardless of size (except the reactor vessel closure studs which are addressed by the Reactor Vessel Closure Studs Program) and material. Consistent with license renewal commitment # 34, the Bolting Integrity Program is applicable to all the bolting being added to the aging management review in Amendment 28.

Clarification of License Renewal Commitment Applicability

Information provided in Amendment 28 does not supersede or invalidate pre-existing VYNPS license renewal commitments. Previous license renewal commitments will be applied to applicable components or programs added to the VYNPS aging management review in Amendment 28 regardless of whether the commitments are mentioned in Amendment 28.

Relationship between information submitted via VYNPS LRA Amendment 27 (July 3, 2007) and LRA Amendment 28 (July 30, 2007)

- The July 3 submittal provided a table of structural boundary descriptions from the VY aging management review report to illustrate the process used to identify the component types in nonsafety-related portions of systems which provide structural support for safety-related components. No new component types required addition to the LRA due to the additional information provided regarding the boundary for the structural support function.
- The July 30 submittal provided changes to Table 2.3.3.13-B "Description of Nonsafety-Related System Components Subject to Aging Management Review Based on 10 CFR 54.4(a)(2) for Physical Interactions" to explain the added scope of systems and components included as a result of the regional inspections as mentioned in the July 3 submittal.
- The July 30 submittal also provided changes to the system tables in the LRA table 2.3.3-13-X and 3.3.2-13-X series. These tables reflect changes resulting from the inclusion of nonsafety-related systems and additional component types in the turbine building that addressed issues raised during the regional inspection. Thus, all scoping activities are complete for nonsafety-related systems and all component types have been identified and are included in the applicable tables of the LRA.