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August 15, 2006

Docket No. 50-271
BVY 06-078
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 VYNPS, "Requests for Additional Information for the Review of Vermont Yankee Nuclear Power Station License Renewal Application", NVY 06-094, dated July 13, 2006.

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
License Renewal Application, Amendment 10

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. Attachment 1 provides responses to the requests for additional information as detailed in Reference 2 that were the result of the scoping and screening audit at VYNPS for mechanical systems, specifically, LRA Subsection 2.,3.1 and Subsection 2.3.2.

Should you have any questions concerning this letter, please contact Mr. James DeVincentis at (802) 258-4236.

I declare under penalty of perjury that the foregoing is true and correct. Executed on August 15, 2006.

Sincerely,

for TAS

Ted A. Sullivan
Site Vice President
Vermont Yankee Nuclear Power Station

Attachment 1
cc: See next page

A117

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Attachment 1

Vermont Yankee Nuclear Power Station

License Renewal Application Supplement

Amendment 10

Scoping and Screening - Mechanical Systems

RAI Responses

RAI 2.3.1.1-1
RAI 2.3.1.1-2
RAI 2.3.1.1-3
RAI 2.3.2.1-1
RAI 2.3.2.1-2
RAI 2.3.2.4-1
RAI 2.3.3.13-1

VYNPS LICENSE RENEWAL APPLICATION
SCOPING AND SCREENING – MECHANICAL SYSTEMS RAI RESPONSES
ATTACHMENT 1

RAI 2.3.1.1-1

In Table 2.3.1-1 of the license renewal application (LRA), the reactor vessel leakage monitoring piping was not identified as a component within scope requiring an aging management review (AMR). The staff requests the applicant to identify the subject components within scope, because it is considered as part of the pressure boundary, and accordingly, it should be within the scope of license renewal and subject to AMR. If, however, the applicant believes that the components need not require an AMR, then they should provide plant-specific justification based on the description of the subject components, or any other relevant information, as to why the components need not be subjected to an AMR.

RAI 2.3.1.1-1 Response

This response assumes that the subject components are those associated with reactor vessel head seal leakage detection. The subject components are not part of the reactor vessel and therefore are not included in Table 2.3.1-1, but are part of the reactor coolant pressure boundary. As shown on LRA drawing LRA-G-191167-0, "Flow Diagram Nuclear Boiler," at coordinate C5, the head seal leakage detection line is subject to aging management review. The associated components are included as 'Piping and fittings < 4" NPS', 'Orifices (instrumentation), and Valve bodies < 4" NPS' in LRA Table 2.3.1-3, "Reactor Coolant Pressure Boundary (RCPB) Components Subject to Aging Management Review." Item 3.1.1-19 of Table 3.1.1 specifically addresses the head seal leak detection line.

RAI 2.3.1.1-2

The staff believes that the scram discharge piping and volume should be in scope requiring aging management. However, it appears that the subject component was not identified in Table 2.3.1-1 of the LRA. Please justify.

RAI 2.3.1.1-2 Response

As shown on LRA drawing LRA-G-191170-0, "Flow Diagram Control Rod Drive Hydraulic System," the scram discharge piping and discharge volume are in scope and subject to aging management review. The scram discharge volume is a section of piping which is used to contain reactor vessel water from the drives during a scram. Since this piping and associated valves constitute part of the reactor coolant pressure boundary, the components are included in line items 'Piping and fittings < 4"NPS', 'Piping and fittings ≥ 4" NPS', 'Valve bodies < 4" NPS' and 'Valve bodies ≥ 4" NPS' in LRA Table 2.3.1-3, "Reactor Coolant Pressure Boundary (RCPB) Components Subject to Aging Management Review." The Control Rod Drive (CRD) scram discharge piping and discharge volume are not in Table 2.3.1-1 because they are not part of the reactor vessel.

RAI 2.3.1.1-3

The staff understands that the control rod drive housing supports (CRDHS) limit the travel of a control rod in the event that a control rod housing is ruptured. The supports prevent a nuclear excursion as a result of a housing failure, thus protecting the fuel barrier, and limiting radioactive releases. In addition, following a postulated failure of the drive housing at the attachment weld at the same time the control rod is withdrawn, and if the collet were to stay unlatched, the housing would separate from the vessel, and the drive and housing would be blown downward against the CRDHS. If credit is taken for the CRDHS; and since, the CRDHS are passive and long-lived, the staff believes that the subject components should be within the scope of license renewal requiring aging management. It appears, however, that the subject components and their intended function of limiting travel of the control rod following control rod housing rupture have not been identified in Table 2.3.1-1 of the LRA. Therefore, the staff requests the applicant to provide an explanation.

RAI 2.3.1.1-3 Response

CRD housing supports are structural elements that are in scope and subject to aging management review. Since they are structural components, they are included in the line item for Component and piping supports ASME Class 1, 2, 3 and MC in Table 2.4-6, "Bulk Commodities Components Subject to Aging Management Review." CRD housing supports are not included in Table 2.3.1-1 because they are not part of the reactor vessel.

RAI 2.3.2.1-1

The low pressure coolant injection coupling was identified in the Boiling Water Reactor Vessel and Internals Project (BWRVIP) -06 report as a safety-related component. It appears, however, that the component was not identified in Table 2.3.2-1 of the LRA requiring an AMR. If the component exists at Vermont Yankee, then the staff requests the applicant to justify its exclusion from aging management; otherwise, submit an AMR for the subject component.

RAI 2.3.2.1-1 Response

VYNPS does not have a low pressure coolant injection coupling.

RAI 2.3.2.1-2

Please clarify whether the passive components, namely, vortex breakers used in pump suction lines, which could be located inside the emergency core cooling system tanks or in the sump, and whose intended functions are to protect the pumps from cavitation, are subject to an AMR. If so, identify which of these tanks are equipped with such passive components, and where in the LRA are the AMRs for these components, or provide justifications for exclusion of these components from aging management requirements.

RAI 2.3.2.1-2 Response

During the integrated plant assessment for VYNPS a review of site documentation for all in scope mechanical systems, including licensing basis and design basis documents as well as the site component database and drawings was completed. Entergy determined that no vortex breakers were required to support system intended functions in the scope of license renewal per 54.4 (a)(1), (a)(2) or (a)(3). Therefore vortex breakers are not included in the VYNPS License Renewal Application.

RAI 2.3.2.4-1

The steam supply and return lines for high pressure coolant injection and reactor core isolation cooling (RCIC) perform safety functions, and therefore, should be in scope of license renewal in accordance with 10 CFR 50.4(a)(1). The staff requests the applicant to clarify whether the subject components are in scope requiring an AMR.

RAI 2.3.2.4-1 Response

As shown on LRA drawings LRA-G-191169-SH-01-0 and LRA-G-191169-SH02-0, "Flow Diagram High Pressure Coolant Injection System," the steam supply and return lines for the high pressure coolant injection (HPCI) system are in scope and subject to aging management review. These lines support the intended functions of the HPCI system and are therefore subject to aging management review in accordance with 10 CFR 50.4(a)(1).

As shown on LRA drawings LRA-G-191174-SH-01-0 and LRA-G-191174-SH-02-0, "Flow Diagram Reactor Core Isolation Cooling System," the steam supply and return lines for the RCIC system are in scope and subject to aging management review. These lines support the intended functions of the RCIC system and are therefore subject to aging management review in accordance with 10 CFR 50.4(a)(1).

RAI 2.3.3.13-1

In Page 2.3-68 of the LRA, it was stated that the safety function of the neutron monitoring system is to detect conditions in the core that threaten the overall integrity of the fuel barrier due to excessive power generation and provide signals to the reactor protection system so that the release of radioactive material from the fuel barrier is limited, and that these signals are provided from the intermediate range monitor (IRM) and average power range monitor (APRM). The staff believes that in addition to IRM and APRM, rod block monitor, local power range monitor, and oscillating power range monitor also perform safety functions, and therefore, these components and the related electrical cables should also be in the scope of license renewal requiring an AMR.

RAI 2.3.3.13-1 Response

The purpose of VYNPS LRA Section 2.3 "Scoping and Screening Results: Mechanical Systems," subsection 2.3.3.13.2 "Physical Interactions" as shown on Page 2.3-68, is to describe the nonsafety-related mechanical portion of the neutron monitoring system whose failure could impact a safety function through physical interaction. In support of this purpose, a brief description of the neutron monitoring system is provided. This section of the LRA is not intended to provide a description of electrical portions of the system such as the rod block monitor, local power range monitor, and oscillating power range monitor.

As stated in LRA Section 2.2 "Plant Level Scoping Results," all electrical and I&C commodities contained in electrical and mechanical systems are in scope by default. Therefore, the rod block monitor, local power range monitor, and oscillating power range monitor, which are part of the neutron monitoring system, are in the scope of license renewal.