July 10, 2006

Mr. Michael Kansler
President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601-1839

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF VERMONT YANKEE NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION

Dear Mr. Kansler:

By letter dated January 25, 2006, as supplemented by letter dated March 15, 2006, the U.S. Nuclear Regulatory Commission (NRC) received the Entergy Nuclear Operations, Inc. application for renewal of Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station (VYNPS). The NRC staff is reviewing the information contained in the license renewal application and has identified, in the enclosure, areas where additional information is needed to complete the review. Specifically, the enclosed requests for additional information are from the NRC Quality and Vendor Branch B team that performed the scoping and screening methodology audit at VYNPS.

Based on discussions with Mr. Jim DeVincentis of your staff, a mutually agreeable date for your response is within 30 days of the date of this letter. If you have any questions regarding this letter or if circumstances result in your need to revise the response date, please contact me at 301-415-4053 or by e-mail at jgr@nrc.gov.

Sincerely,

/RA/

Jonathan Rowley, Project Manager
License Renewal Branch B
Division of License Renewal
Office of Nuclear Reactor Regulation

Docket No. 50-271

Enclosure:
Requests for Additional Information

cc w/encl: See next page

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Letter to Michael Kansler from Jonathan Rowley dated July 10, 2006

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR THE REVIEW OF VERMONT YANKEE NUCLEAR POWER STATION LICENSE RENEWAL APPLICATION

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VERMONT YANKEE NUCLEAR POWER STATION
LICENSE RENEWAL APPLICATION
REQUESTS FOR ADDITIONAL INFORMATION (RAIs)

RAI 2.1-1

Title10 *of the Code of Federal Regulations* (CFR) Section 54.4(a)(1) states, in part, that systems, structures, and components (SSCs) within the scope of license renewal include safety-related SSCs which are those relied upon to remain functional during and following design basis events (as defined in 10 CFR 50.49(b)(1)). 10 CFR 50.49, states that design basis events are defined as conditions of normal operation, including anticipated operational occurrences, design-basis accidents, external events, and natural phenomena for which the plant must be designed. In regard to identification of design-basis events, Section 2.1.3, "Review Procedures," of NUREG-1800 states:

> The set of design-basis events as defined in the rule is not limited to Chapter 15 (or equivalent) of the updated final safety analysis report (UFSAR). Examples of design basis events that may not be described in this chapter include external events, such as floods, storms, earthquakes, tornadoes, or hurricanes, and internal events, such as a high-energy-line break. Information regarding design basis events as defined in 10 CFR 50.49(b)(1) may be found in any chapter of the facility UFSAR, the Commission's regulations, NRC orders, exemptions, or license conditions within the current licensing basis (CLB). These sources should also be reviewed to identify systems, structures and components that are relied upon to remain functional during and following design basis events (as defined in 10 CFR 50.49(b)(1)) to ensure the functions described in 10 CFR 54.4(a)(1).

During the scoping and screening methodology audit, the NRC staff questioned how non-accident design basis events, particularly design-basis events that may not be described in the UFSAR, were considered during scoping. The NRC audit team noted that limiting the review of design bases events to those described in the UFSAR accident analysis could result in omission of safety-related functions described in the current licensing basis.

The staff, therefore, requests the applicant to provide:

a. A list of the design-basis events evaluated as part of the license renewal scoping process.

b. A description of the methodology used to ensure that all design-basis events (including conditions of normal operation, anticipated operational transients, design-basis accidents, external events, and natural phenomena) were addressed during license renewal scoping evaluation.

c. A list of the documentation sources reviewed to ensure that all design-basis events were identified.

If, in addressing the above issues, the applicant's review indicates that additional scoping evaluations are required, describe these additional scoping evaluations to address the 10 CFR 54.4(a)(1) criteria. As applicable, list any additional SSCs included within the scope as a result of these efforts, and list those structures and components for which aging management reviews (AMRs) were conducted. For each structure or component describe the aging management programs (AMPs), as applicable, to be credited for managing the identified aging effects.

RAI 2.1-2

NRC Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," Revision 1, dated September 2005, (Reg Guide 1.188) provided NRC endorsement on the use of NEI 95-10, "Industry Guidelines for Implementing the Requirements of 10 CFR Part 54 - The License Renewal Rule," Revision 6, dated June 2005 (NEI 95-10). Reg Guide 1.188 indicated that NEI 95 -10, Revision 6, provides methods that the NRC staff considers acceptable for complying with the requirements of 10 CFR Part 54 for preparing a license renewal application (LRA).

NEI 95-10, Appendix F, "Industry Guidance on Revised 54.4(a)(2) Scoping Criterion (Non-Safety Affecting Safety)," (NEI 95-10, Appendix F) discusses non-safety SSCs directly connected to safety-related SSCs. NEI 95-10, Appendix F states, in part, that an equivalent anchor may be defined in the CLB, or may consist of a large piece of plant equipment or series of supports that have been evaluated as a part of a plant-specific piping design analysis. Additionally, the guidance states that an applicant may use a combination of restraints or supports, such that the non-safety piping and associated structures and components attached to safety-related piping, is included in the scope up to a boundary point that encompasses at least two supports in each of three orthogonal directions. The guidance in NEI 95-10, Appendix F also describes as an alternative to identifying a seismic anchor or series of equivalent anchors, the use of bounding criteria which includes using a base-mounted component, a flexible connection, or the free end of the piping run as the end point for the portion of the non-safety piping attached to the safety-related piping to be included in the scope of license renewal.

Section 2.1.1.2.2, "Physical Failure of Nonsafety-related SSCs," of the LRA states the following:

> For [Vermont Yankee Nuclear Power Station] VYNPS, the "structural boundary" is defined as the portion of a piping system outside the safety class pressure boundary, yet relied upon to provide structural support for the pressure boundary. The structural boundary is often shown on piping isometric drawings and is considered synonymous with the first seismic or equivalent anchor.

Section 2.1.2.1.2, "Identifying Components Subject to Aging Management Review Based on Support of an Intended Function for 10 CFR 54.4.2," of the LRA states the following:

> Nonsafety-related piping systems connected to safety-related systems were included up to the structural boundary or to a point that includes and adequate portion of the nonsafety-related piping run to conservatively include the first seismic or equivalent anchor. An equivalent anchor is a combination of hardware or structures that together are equivalent to a seismic anchor. A seismic anchor is defined as hardware or structures that, as required by analysis, physically restrain forces and moments in three orthogonal directions.

If isometric drawings were not readily available to identify the structural boundary, connected lines were included to a point beyond the safety/nonsafety interface, Such as a base-mounted component, flexible connection, or the end of a piping run (such as a drain line). This is consistent with the guidance of NEI 95-10, Appendix F.

Based on a review of the LRA, the applicant's scoping and screening implementation procedures, and discussions with the applicant, the NRC staff determined that additional information is required with respect to certain aspects of the applicant's evaluation of the 10 CFR 54.4(a)(2) criteria. The staff requests the applicant to provide the following information:

a. Indicate how the structural boundary, which includes the portion of the non-safety piping system outside the safety-related pressure boundary and relied upon to provide structural support for the pressure boundary, was developed. Include a description of the analysis performed to identify the portion of non-safety piping and components required to support the integrity of the safety-related piping and components (relative to the identification of the structural boundary).

b. Indicate whether equivalent anchors, outside of the analyzed structural boundary and not including the bounding condition terminations (base-component, flexible connection, and end of the piping run), were used. If equivalent anchors, outside of the analyzed structural boundary and not including the bounding condition terminations, were not used, items (c) and (d) below do not need to be addressed.

c. If equivalent anchors, as described in item (b) above, were used, indicate the definition of equivalent anchor which was used for the purpose of the 10 CFR 54.4(a)(2) evaluation and how the definition corresponds to the CLB and to the definition of equivalent anchor listed in NEI 95-10, Appendix F.

d. If equivalent anchors, as described in item (b) above, were used, indicate the number and location of equivalent anchors (i.e., extent of condition).

In addressing each of the above issues, if the review indicates that use of the scoping methodology precluded the identification of any non-safety SSCs that could interact with safety-related SSCs, describe any additional scoping evaluations to be performed to address the 10 CFR 54.4(a)(2) criteria. As part of your response, list any additional SSCs included within the scope as a result of your efforts, and list those structures and components for which AMRs were conducted. For each structure and component, describe the AMPs, as applicable, to be credited for managing the identified aging effects.

RAI 2.1-3

10 CFR 54.4(a)(3) requires that all SSCs relied on in safety analyses or plant evaluations to perform a function that demonstrates compliance with the Commission's regulation for station blackout (10 CFR 50.63) be included in the scope of license renewal. Section 2.1.1.3.5 of the applicant’s license renewal application states that the Vernon Hydroelectric Station is credited as the alternate current power source for station blackout (SBO). Section 2.4.5 of the LRA

states that the Vernon Hydroelectric Station structures are within the scope of license renewal. However, the mechanical and electrical systems associated with the Vernon Hydroelectric Station are not specifically addressed in the LRA.

Report Number LRPD-01, "System and Structure Scoping Results," Revision 0, provides the applicant's results for identifying systems (mechanical and electrical) and structures that are in the scope of license renewal. Section 5 and Table 2-1 of LRPD-01 identify the Vernon Hydroelectric Station structures that are in the scope of license renewal. However, the mechanical and electrical systems associated with the Vernon Hydroelectric Station are not specifically addressed in LRPD-01.

Based on the review of the applicant's scoping evaluation related to the 10 CFR 54.4(a)(3) SBO criterion, the NRC staff requests the applicant to provide the following information:

a. Describe the scoping and screening methodology applied to the mechanical and electrical systems associated with the Vernon Hydroelectric Station, and identify those mechanical and electrical SSCs that are in the scope of license renewal and subject to an AMR.

b. If, in addressing the above issues, the applicant's review indicates that additional scoping evaluations are required, describe these additional scoping evaluations. As applicable, list any additional SSCs included within the scope as a result of these efforts, and list those structure and components for which AMRs were conducted. For each structure or component describe the AMPs, as applicable, to be credited for managing the identified aging effects.

RAI 3.0-1

The NRC staff reviewed the applicant's AMPs described in Appendix A, "Updated Safety Analysis Report Supplement," and Appendix B, "Aging Management Programs and Activities," of the VYNPS LRA. In addition, the NRC staff reviewed each individual AMP basis document to ensure consistency in the use of the quality assurance attributes for each program. The purpose of this review was to assure that the aging management activities were consistent with the staff's guidance described in NUREG-1800, Section A.2, "Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1)."

Based on the NRC staff's evaluation, the descriptions and applicability of the plant-specific AMPs and their associated quality attributes provided in Appendix A, Section A.2.1, and Appendix B, Section B.0.3, of the LRA are generally consistent with the staff's position regarding quality assurance for aging management. However, the applicant has not sufficiently described the use of the quality assurance program and its associated attributes (corrective action, confirmation process, and administrative controls). Specifically, the applicant did not identify those AMPs which do not credit the VYNPS 10 CFR Part 50, Appendix B, Quality Assurance Program, for the corrective action, confirmation process, and administrative control attributes, or provide a description of the process used in lieu of the VYNPS Quality Assurance Program.

Additionally, the NRC staff noted that the AMP basis documents did not consistently describe the application of the VYNPS 10 CFR Part 50, Appendix B, Quality Assurance Program, or an alternative for the corrective action, confirmation process, and administrative control attributes in each AMP. The NRC staff, therefore, requests that the applicant:

a. Provide a supplement to the description in the Appendix A, Section A.2.1, of the LRA to clearly indicate the application of the VYNPS 10 CFR Part 50, Appendix B, Quality Assurance Program, or an alternative for the corrective action, conformation process, and administrative control attributes in each program.

b. If any alternative approaches are identified in Item a above in lieu of the VYNPS 10 CFR Part 50, Appendix B, Quality Assurance Program, provide sufficient detail of their descriptions for the staff to determine if the quality attributes for the AMPs are consistent with the review acceptance criteria contained in NUREG-1800, Section A.2, “Quality Assurance for Aging Management Programs (Branch Technical Position IQMB-1).”

c. Provide a consistent description for each AMP bases document which describes the application of the VYNPS 10 CFR Part 50, Appendix B, Quality Assurance Program, or an alternative for the corrective action, confirmation process, and administrative control attributes in each AMP.