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To: "Rick Ennis" <RXE@nrc.gov>
Date: 8/2/05 2:15AM
Subject: Letter BVY 05-072

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

August 1, 2005

Docket No. 50-271
BVY 05-072
TAC No. MC0761

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

Subject: **Vermont Yankee Nuclear Power Station
Technical Specification Proposed Change No. 263 – Supplement No. 30
Extended Power Uprate – Response to Request for Additional Information**

- References:
- 1) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263, Extended Power Uprate," BVY 03-80, September 10, 2003
 - 2) Entergy letter to U.S. Nuclear Regulatory Commission, "Vermont Yankee Nuclear Power Station, License No. DPR-28 (Docket No. 50-271), Technical Specification Proposed Change No. 263, Supplement No. 24 – Response to Request for Additional Information," BVY 05-024, March 10, 2005
 - 3) U.S. Nuclear Regulatory Commission (Richard B. Ennis) letter to Entergy Nuclear Operations, Inc. (Michael Kansler), "Request for Additional Information – Extended Power Uprate, Vermont Yankee Nuclear Power Station (TAC No. MC0761)," July 27, 2005

This letter provides additional information regarding the application by Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. (Entergy) for a license amendment (Reference 1) to increase the maximum authorized power level of the Vermont Yankee Nuclear Power Station (VYNPS) from 1593 megawatts thermal (MWt) to 1912 MWt.

The major aspects of this submittal are:

- 1) An update to Entergy's response to request for additional information (RAI) item SRXB-A-6 regarding certain analytical methodologies of General Electric (GE) that are used for the design and evaluation of VYNPS' fuel. The prior response to SRXB-A-6 was provided with Entergy's letter of March 10, 2005 (Reference 2) and is being superseded by this submittal.

- 2) An executive overview summarizing Entergy's understanding of the key issues remaining to provide reasonable assurance of steam dryer integrity at EPU conditions and also summarizing the framework for Entergy's response to those issues.
- 3) Responses to a significant number of those RAIs requested by NRC letter of July 27, 2005 (Reference 3). The remaining RAIs that pertain to the steam dryer and piping/nozzle stress evaluations are not included, but will be transmitted as a separate submittal by August 4, 2005.

GE Analytical Methods

In its letter of March 10, 2005, Entergy had proposed in its response to RAI SRXB-A-6 a means of addressing the NRC staff's questions regarding GE methods. The response was consistent with the Methods Interim Process proposed by GE in its letter of March 25, 2005 (MFN 05-005). Although Entergy remains confident that the concepts originally advanced in the response to RAI SRXB-A-6 are valid, an alternate, VYNPS-specific approach is provided by this letter. Entergy is revising and superseding the prior response to SRXB-A-6 with this submittal.

The alternate approach, discussed in the revised response to RAI SRXB-A-6 (Attachment 1), considers those core operating parameters and associated limits that could be impacted if all the uncertainties in methodology postulated by the staff were present during EPU operation, and then evaluating what, if any, operating restrictions should be imposed to compensate for this theoretical condition by providing additional safety margins to the affected limits. Using this approach Entergy has determined that a change of 0.02 to the safety limit minimum critical power ratio (SLMCPR) provides sufficient additional conservatism and adequate margin to address the postulated uncertainties in GE's methodology. Entergy is therefore proposing a license condition for EPU operation that imposes this additional 0.02 SLMCPR restriction until such time that the generic issues associated with GE analytical methods are adequately resolved with respect to VYNPS.

The alternate approach also describes Entergy's basis for confirming the adequacy of existing margin to accommodate the postulated uncertainties and assessing their impact on each of the remaining affected core operating parameters and associated limits. In addition, actual VYNPS operational experience with regard to core thermal limits is provided in the revised response to RAI SRXB-A-6.

Steam Dryer Analyses

Attachment 3 provides an overview of Entergy's understanding of the fundamental issues left to be resolved in order to provide reasonable assurance that steam dryer integrity will be maintained at EPU conditions. These issues are drawn from 129 individual questions posed by the NRC staff. Attachment 3 provides a restatement of

Entergy's overall approach to the steam dryer integrity issue and the framework of Entergy's strategy in addressing the remaining fundamental issues so that the answers to individual questions can be reviewed in that context. Attachment 5 provides responses to questions associated with computational fluid dynamics and steam dryer loads at EPU conditions. The remainder of the steam dryer-related RAIs are in review and are expected to be submitted by August 4, 2005.

Response to Requests for Additional Information

Attachments 4, 5, 7, 8, and 9 respond to individual RAIs, according to NRC review branch. Of the 200 individual RAIs requested by the NRC in Reference 3, 107 which pertain primarily to uncertainties in the acoustic circuit model, Scale Model Test benchmark adequacy, and applicability of the insights gained from the Quad Cities 2 instrumented dryer tests will be addressed in a future submittal, expected to be provided by August 4, 2005.

The revised response to RAI SRXB-A-6, as well as other responses to Reactor Systems Branch RAIs, (Attachments 1 and 9) contain Proprietary Information as defined by 10CFR2.390 and should be handled in accordance with provisions of that regulation. Attachments 1 and 9 are considered to be Proprietary Information in their entirety. Attachments 2 and 10 are non-proprietary versions of Attachments 1 and 9, respectively. Affidavits supporting the proprietary nature of the documents are provided as Attachment 6 (for Attachment 1), and as Attachment 12 (two affidavits for Attachment 9). "Exhibits," which provide supporting information to certain RAI responses are included in Attachment 11.

This submittal provides a substantial portion of the information needed to support the preparation of the NRC's safety evaluation report for EPU and is therefore being submitted in advance of the responses to the remaining questions. In compiling and analyzing the information for this submittal, Entergy remains convinced that the VYNPS can be safely operated at up to 120% CLTP. It is our understanding that an audit of the underlying details supporting elements of this submittal will be conducted on or about August 22, 2005. Entergy anticipates that the nature of the audit will be confirmatory and respectfully requests that additional requests for information, if any, be communicated as soon as practical.

The following attachments are included in this submittal:

Attachment	Title
1	Revised Response to RAI SRXB-A-6 (proprietary version)
2	Revised Response to RAI SRXB-A-6 (non-proprietary version)
3	Overview of Steam Dryer Issues
4	Responses to RAIs EEIB-A-1 through EEIB-A-5 (no proprietary information)
5	Responses to RAIs EMEB-B-18 through EMEB-B-149, non-inclusive (non-proprietary version)
6	Affidavit for Attachment 1

7	Responses to RAIs SPSB-C-47 through SPSB-C-52 (no proprietary information)
8	Responses to RAIs SPLB-A-25 through SPLB-A-29 (no proprietary information)
9	Responses to RAIs SRXB-A-7 through SRXB-A-58 (proprietary version)
10	Responses to RAIs SRXB-A-7 through SRXB-A-58 (non-proprietary version)
11	RAI Response Exhibits (10)
12	Two affidavits for Attachment 9
13	New Regulatory Commitments (2)

There are two new regulatory commitments contained in this submittal that are incorporated into the responses to RAIs EEIB-B-1 and EEIB-B-5 regarding actions associated with the postulated station blackout event. They are summarized in Attachment 13.

This supplement to the license amendment request provides additional information to clarify Entergy's application for a license amendment and does not change the scope or conclusions in the original application, nor does it change Entergy's determination of no significant hazards consideration.

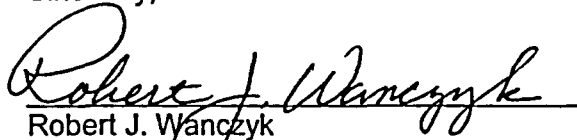
Entergy stands ready to support the NRC staff's review of this submittal and suggests meetings (or audits of design files) at your earliest convenience.

If you have any questions or require additional information, 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 2, 2005.

Sincerely,


Robert J. Wanczyk
Director, Nuclear Safety Assurance
Vermont Yankee Nuclear Power Station

Attachments (13)

cc: (see next page)

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