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05620-2601  
DEC 27 A 10:51

BVY 11-085

December 22, 2011

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

SUBJECT: Proposed Change No. 296  
Steam Dryer License Condition Change  
Vermont Yankee Nuclear Power Station  
Docket No. 50-271  
License No. DPR-28

Dear Sir or Madam:

In accordance with 10CFR50.90, Vermont Yankee (VY) is proposing an amendment to Operating License DPR-28 for Vermont Yankee Nuclear Power Station. The proposed change would revise VY Operating License (OL) Condition 3.S to allow BVRVIP-139-A "BWR Vessel and Internals Project Steam Dryer Inspection and Flaw Evaluation Guidelines" to be the basis for future steam dryer monitoring and inspections.

VY has reviewed the proposed amendment in accordance with 10CFR50.92 and concludes it does not involve a significant hazards consideration. In accordance with 10CFR50.91, a copy of this application, with attachments, is being provided to the State of Vermont, Department of Public Service.

Attachment 1 to this letter provides a detailed description and evaluation of the proposed change. Attachment 2 contains a markup of the current VY OL page. Attachment 3 contains the retyped OL page.

No new regulatory commitments are made in this submittal.

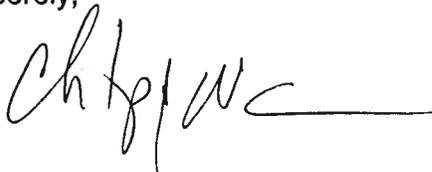
VY requests review and approval of the proposed license amendment by January 1, 2013 with a 60 day implementation period from the date of approval to allow for implementation prior to the next scheduled refuel outage.

If you have any questions on this transmittal, please contact Mr. Robert Wanczyk at 802-451-3166.

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

Executed on December 22, 2011.

Sincerely,

A handwritten signature in black ink, appearing to read 'CJW/JMD', with a long horizontal line extending to the right.

CJW/JMD

**Attachments**

1. Description and Evaluation of the Proposed Changes
2. Markup of the Current Operating License Page
3. Retyped Operating License Page

cc: Mr. William W. Dean  
Regional Administrator, Region 1  
U.S. Nuclear Regulatory Commission  
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Mr. James S. Kim, Project Manager  
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USNRC Resident Inspector  
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320 Governor Hunt Rd  
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Ms Elizabeth Miller, Commissioner  
VT Department of Public Service  
112 State Street – Drawer 20  
Montpelier, Vermont 05620-2601

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Change 296

Description and Evaluation of Proposed Changes

## 1. SUMMARY DESCRIPTION

Pursuant to 10 CFR 50.90, Vermont Yankee (VY) hereby proposes to amend Vermont Yankee Nuclear Power Station Operating License DPR-28. Specifically, Operating License Condition (OLC) 3.S is proposed to be revised to allow BWRVIP-139-A "BWR Vessel and Internals Project Steam Dryer Inspection and Flaw Evaluation Guidelines" to form the basis for steam dryer monitoring and inspections performed during the period of extended operation. The NRC approved the use of BWRVIP-139-A in Reference 6.a.

## 2. DETAILED DESCRIPTION

License Condition 3.S currently states:

*In accordance with Atomic Safety and Licensing Board order LBP-08-25, dated November 24, 2008, notwithstanding any other provision of this license, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. shall continue to perform and implement the continuous parameter monitoring, moisture content monitoring, and visual inspections specified in the SDMP at the intervals specified in the General Electric Service Information Letter 644, Revision 2. These shall continue for the full term of the period of extended operation unless this provision of the license is duly amended.*

License Condition 3.S is proposed to be revised as follows:

*Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. shall perform and implement the continuous parameter monitoring, moisture content monitoring, and visual inspections of the steam dryer specified in BWRVIP-139-A, Final Report, dated July 2009. These shall continue for the full term of the period of extended operation unless this provision of the license is duly amended.*

## 3. TECHNICAL EVALUATION

The design of the VY steam dryer is described in Updated Final Safety Analysis Report section 3.3 "Reactor Vessel Internals Mechanical design." The steam dryer removes moisture from the wet steam which exits the steam separators. The wet steam leaving the steam separators flows across the dryer vanes and the moisture flows down through collecting troughs and tubes to the water above the downcomer annulus.

The VY steam dryer is also described in detail in BWRVIP-139-A Section 2.3.4 and is of the square hood design.

Based on operating experience, General Electric Company (GE) issued Service Information Letter (SIL) 644 which provided recommendations for steam dryer monitoring and inspection.

VY received License Amendment (LA) 229 (Reference 6.b) to allow operation at extended power uprate (EPU) conditions. LA 229 included OLCs associated with inspection and monitoring the steam dryer. These OLCs were consistent with GE SIL 644, Revision 1.

In accordance with EPU OLC 3.M.5, VY has performed baseline steam dryer inspections during three scheduled refueling outages beginning in 2007 (i.e., 2007, 2008, 2010). These visual inspections were conducted of all accessible, susceptible locations of the steam dryer, including flaws left "as-is" and modifications.

The results of the steam dryer inspections were reported to the NRC in accordance with OLC 3.M.6. The steam dryer inspections did not identify any unacceptable fatigue induced structural flaws. These results were reported to the NRC in References 6.d, 6.e and 6.f.

In accordance with OLC 3.M.8, OLC 3.M has expired since the conditions identified in OLC 3.M.5, 3.M.6 and 3.M.7 have been satisfied.

VY received LA 246 (Reference 6.c) to extend the facility operating license in March 2011. OLC 3.S was established and deals with the steam dryer monitoring and performance. OLC 3.S requires that VY continue to perform and implement continuous parameter monitoring, moisture content monitoring, and visual inspections specified in the Steam Dryer Monitoring Plan at the intervals specified in General Electric Service Information Letter 644, Revision 2, for the full term of the period of extended operation unless this provision of the license is duly amended.

This proposed change requests that OLC 3.S be revised to allow BWRVIP-139-A "BWR Vessel and Internals Project Steam Dryer Inspection and Flaw Evaluation Guidelines" to form the basis for future steam dryer monitoring and inspections. BWRVIP-139-A has been approved by the NRC and provides an acceptable level of assurance that steam dryer structural integrity will be maintained and performance monitoring will be established.

BWRVIP-139-A provides steam dryer inspection and inspection frequency recommendations. VY's steam dryer is described in Section 2.3.4 and the recommended inspections are applicable to the VY dryer design. Table 5-1 "Summary of Steam Dryer Inspection Recommendations (Square Hood Design)" provides recommendations for inspections of the VY steam dryer. Section 5.3.4 provides reinspection recommendations. Since VY has completed three baseline inspections at the current licensed power level, this would require reinspection every 7 refueling outages (based on an 18 month cycle). The scope of the inspection will include all key locations as indicated in Figure 5-1 through Figure 5-11 and a 10 percent sampling of the other locations called out in the baseline inspection guidelines.

Steam dryer performance monitoring is controlled by station procedures. GE SIL 644, Revision 2 Appendix D, which is included in BWRVIP-139-A Appendix E, recommends a limit of 0.1 weight % be used as the administrative moisture carry over (MCO) limit for taking action to further assess dryer integrity issues. Plants with sufficient baseline MCO data and operating experience may elect to implement an alternate MCO limit. VY has established an administrative limit of 0.19 weight %. This was based on monitoring of actual MCO values following operation at EPU conditions. The 0.19 weight % limit was selected to provide margin from actual measured reading which ranged from 0.14 weight % to 0.173 weight %.

In addition to MCO monitoring, station procedures monitor for changes in other station processes including steam flow differences, steam line pressure difference or changes, feedwater flow differences, reactor water level changes and feedwater temperature changes.

VY believes the steam dryer monitoring described above meets BWRVIP-139-A and therefore provides an acceptable approach to satisfying the proposed OLC 3.S.

#### 4. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Pursuant to 10 CFR 50.92, Vermont Yankee (VY) has reviewed the proposed change and concludes that the change does not involve a significant hazards consideration since the proposed change satisfies the criteria in 10 CFR 50.92(c). These criteria require that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. The discussion below addresses each of these criteria and demonstrates that the proposed amendment does not constitute a significant hazard.

Operating License Condition 3.S is proposed to be revised to allow BWRVIP-139-A "BWR Vessel and Internals Project Steam Dryer Inspection and Flaw Evaluation Guidelines" to form the basis for future steam dryer monitoring and inspections.

The proposed change does not involve a significant hazards consideration because:

1. Does the proposed amendment involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

The amendment does not significantly increase the probability of an accident since it does not involve a change to any plant equipment that initiates a plant accident. The change affects the standard by which future steam dryer monitoring and structural integrity inspections are performed. The proposed standard has been approved for use by the NRC. The steam dryer is not an initiator or mitigator of any previously evaluated accidents. Maintaining structural integrity of the steam dryer ensures that systems and components that are credited in station safety analysis function as designed. Therefore, the proposed amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed amendment create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

The proposed amendment does not involve any physical alteration of plant equipment and does not change the method by which any safety-related system performs its function. The change affects the standard by which future steam dryer monitoring and structural integrity inspections are performed. The proposed standard has been approved for use by the NRC. No new or different types of equipment will be installed and the basic operation of installed equipment is unchanged. The methods governing plant operation and testing remain consistent with current safety analysis assumptions. Therefore, the proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does the proposed amendment involve a significant reduction in a margin of safety?

Response: No.

The proposed amendment affects the standard by which future steam dryer monitoring and structural integrity inspections are performed. The proposed standard has been approved for use by the NRC. The change does not affect design codes or design margins. The change provides for monitoring and inspection of the steam dryer to ensure the dryer maintains its integrity and does not affect safety related equipment. This ensures analyzed safety margins are maintained. Therefore, operation of VY in accordance with the proposed amendment will not involve a significant reduction in the margin to safety.

Based on the above, Entergy concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

## 5. ENVIRONMENTAL CONSIDERATIONS

This amendment request meets the eligibility criteria for categorical exclusion from environmental review set forth in 10 CFR 51.22(c)(9) as follows:

- (i) The amendment involves no significant hazards determination.

As described in Section 4 of this evaluation, the proposed change involves no significant hazards consideration.

- (ii) There is no significant change in the types or significant increase in the amounts of any effluent that may be released offsite.

The proposed amendment does not involve any physical alterations to the plant configuration that could lead to a change in the type or amount of effluent release offsite.

- (iii) There is no significant increase in individual or cumulative occupational radiation exposure.

The proposed amendment does not involve a significant increase in individual or cumulative occupational radiation exposure.

Based on the above, VY concludes that the proposed change meets the eligibility criteria for categorical exclusion as set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

**6. REFERENCES**

- a. Letter, USNRC to Mr. David Czufin, Chairman, BWR Vessel and Internals Project, U.S. Nuclear Regulatory Commission Approval Letter for BWRVIP-139-A. "BWR Vessel and Internals Project, Steam Dryer Inspection and Flaw Evaluation Guidelines" (TAC No. ME4372), dated August 3, 2011
- b. Letter, USNRC to VYNPS, Vermont Yankee Nuclear Power Station – Issuance of Amendment RE: Extended Power Uprate (TAC No. MC0761), NVY 06-28, dated March 2, 2006
- c. Letter, USNRC to VYNPS, Issuance of Renewed Facility Operating License No. DPR-28 for the Vermont Yankee Nuclear Power Station, NVY 11-031, dated March 21, 2011
- d. Letter, VYNPS to USNRC, Vermont Yankee RFO 26 Steam Dryer Inspections Results, BVY 07-049, dated July 23, 2007
- e. Letter, VYNPS to USNRC, Vermont Yankee RFO 27 Steam Dryer Inspections Results, BVY 08-085, dated December 18, 2008
- f. Letter, VYNPS to USNRC, Vermont Yankee RFO 28 Steam Dryer Inspections Results, BVY 10-035, dated July 1, 2010

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Change 296

Markup of the Current Operating License Page

5. Steam Dryer License Condition

In accordance with Atomic Safety and Licensing Board order LBP-08-25, dated November 24, 2008, notwithstanding any other provision of this license, Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. shall continue to perform and implement the continuous parameter monitoring, moisture content monitoring, and visual inspections specified in the SDMP at the intervals specified in General Electric Services Information Letter 644, Revision 2. These shall continue for the full term of the period of extended operation unless this provision of the license is duly amended.

4. This renewed operating license is effective as of the date of issuance and shall expire at midnight on March 21, 2032.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By  
Eric J. Leeds

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation

Enclosures:  
Appendix A - Technical Specifications

Date of Issuance: March 21, 2011

*Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. shall perform and implement the continuous parameter monitoring, moisture content monitoring, and visual inspections of the steam dryer in accordance with BWRVIP-139-A, Final Report, dated July 2009. These shall continue for the full term of the period of extended operation unless this provision of the license is duly amended.*

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Change 296

Retyped Operating License Page

S. Steam Dryer License Condition

Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. shall perform and implement the continuous parameter monitoring, moisture content monitoring, and visual inspections of the steam dryer in accordance with BWRVIP-139-A, Final Report, dated July 2009. These shall continue for the full term of the period of extended operation unless this provision of the license is duly amended.

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