Entergy

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

September 10, 2003
BVY 03-80

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

Subject: **Vermont Yankee Nuclear Power Station**
License No. DPR-28 (Docket No. 50-271)
Technical Specification Proposed Change No. 263
Extended Power Uprate

Pursuant to 10CFR50.90, Vermont Yankee[1] (VY) hereby proposes to amend its Facility Operating License, DPR-28, for the Vermont Yankee Nuclear Power Station (VYNPS). The proposed license amendment will increase the maximum authorized power level from 1593 megawatts thermal (MWt) to 1912 MWt. This request includes supporting Technical Specification (TS) changes necessary to implement the increased power level. The proposed extended power uprate (EPU) represents an increase of approximately 20% above original rated thermal power (RTP).

Attachment 1 to this letter contains a description and summary justification of each proposed change to the operating license and TS. Attachment 2 contains the determination of no significant hazards consideration associated with the license amendment request. VY has reviewed the proposed change to the current licensing basis in accordance with 10CFR50.92 and concludes that the proposed change does not involve a significant hazards consideration.

Attachment 3 provides a list of modifications and tests necessary to support EPU. These modifications will be implemented during the next two refueling outages (i.e., the refueling outages expected to begin in the Spring of 2004 (i.e., RFO-24) and Fall 2005 (i.e., RFO-25)). Modifications performed during RFO-24 will allow for an approximate 15% increase in RTP. Modifications completed subsequent to RFO-24 should allow the facility to achieve the full uprate to 1912 MWt. VY has evaluated the modifications currently planned to support EPU and determined that they do not constitute a material alteration to the plant, as discussed in 10CFR50.92. These modifications constitute planned actions on the part of VY. Further evaluations may identify the need for additional modifications or obviate the need for some modifications as currently identified. As such, this is not a formal commitment to implement the modifications exactly as described or per the proposed schedule. Also, included as part of Attachment 3, is a Power Ascension Test Plan matrix that specifies expected EPU testing at different power levels and a Comparison of Initial Startup Testing and Planned EPU Testing.

This request for license amendment was prepared following the guidelines contained in the NRC-approved, NEDC-33004P-A[2]. Attachment 4 contains NEDC-33090P[3], which is the Power Uprate

[1] Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc. are the licensees of the Vermont Yankee Nuclear Power Station.

[2] GE Nuclear Energy, "Constant Pressure Power Uprate," Licensing Topical Report NEDC-33004P-A (Proprietary), July 2003, and NEDO-33004-A (Non-Proprietary), July 2003.

[3] GE Nuclear Energy, "Safety Analysis Report for Vermont Yankee Nuclear Power Station Constant Pressure Power Uprate," NEDC-33090P, September 2003.

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Safety Analysis Report (PUSAR) for VYNPS. The PUSAR is a summary of the results of the safety analyses and evaluations performed specifically for the VYNPS EPU. The PUSAR contains information which General Electric Company (GE) considers proprietary. GE requests that the proprietary information in this report be withheld from public disclosure in accordance with 10CFR9.17(a)(4) and 10CFR2.790(a)(4). An affidavit supporting this request is provided in Attachment 5. The NRC may duplicate this submittal, including the PUSAR, for the purpose of internal review. A non-proprietary version of NEDC-33090 is included as Attachment 6.

As part of the power ascension test plan, VY is not planning to conduct large transient testing which requires an automatic scram from high power (e.g., main steam isolation valve (MSIV) closure). Attachment 7 provides justification for not performing this testing.

This request for license amendment, while not being submitted as a risk informed licensing action, as defined by Regulatory Guide 1.174[4], was evaluated from a risk perspective. As demonstrated in Section 10.5 of the PUSAR, when the guidelines established in Regulatory Guide 1.174 are applied, the calculated results from the Level 1 and Level 2 Probabilistic Safety Analyses represent a very small risk increase in core damage frequency (CDF) and large early release frequency (LERF). The best estimate of the risk increase for at-power internal events due to the EPU is a delta CDF of 3.3 E-7/year (i.e., an increase of 4.2% over the base CDF of 7.77 E-6/year. The best estimate for at-power internal events results in a delta LERF of 1.1 E-7/year (i.e., an increase of 4.9% over the base LERF of 2.23 E-6/year. VY considers these revised estimates continue to present an acceptable level of risk.

Transition to the GE14 fuel design is necessary to achieve the full EPU. VYNPS' current reactor core is partially GE-14 fuel. Complete transition should occur over the next two refueling cycles.

VY has performed an assessment of environmental impacts of the proposed EPU from 1593 MWt to 1912 MWt. This assessment was performed by comparing the environmental impacts of the EPU to those previously identified by the U.S. Atomic Energy Commission in the 1972 Final Environmental Statement[5] (FES) for continued construction and proposed issuance of an operating license for VYNPS. The comparisons show that the conclusions of the FES and Environmental Assessment remain valid for operation at 1912 MWt. Attachment 8 contains the VYNPS Environmental Assessment Report for EPU. The intent of the assessment is to provide sufficient information for the NRC to evaluate the environmental impact of the power uprate in accordance with the requirements of 10CFR51.

As part of the proposed license amendment, VY is proposing a change to the licensing bases with regard to the crediting of containment overpressure for calculating certain pump net-positive suction head (NPSH) following a loss-of-coolant accident (LOCA), station blackout and Appendix R fire events. VYNPS currently complies with the provisions of Safety Guide 1[6] (i.e., Regulatory Guide 1.1). As a result of the proposed EPU, VY is revising these design bases, recognizing the contribution to NPSH provided by increased containment pressure following the postulated events. Credit for containment overpressure will be taken to assure that adequate NPSH is available for low pressure emergency core cooling system (ECCS) pumps. This change is consistent with actions taken by other utilities who have sought EPUs. PUSAR Section 4.2.6 provides the justification for the proposed change in licensing bases.

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[4] U.S. Nuclear Regulatory Commission, Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," July 1998.

[5] U.S. Atomic Energy Commission, "Final Environmental Statement Related to the Operation of Vermont Yankee Nuclear Power Station," Docket No. 50-271, July 1972.

[6] U.S. Atomic Energy Commission, Safety Guide 1, "Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal System Pumps," November 2, 1970.

In support of the VYNPS EPU, VY has previously requested two other license amendments. Acceptance of the other two license amendment requests is necessary to achieve full EPU. The first of the submittals[7] (i.e., ARTS/MELLLA) supports operation of VYNPS in a core flow region which is above the rated rod line. The implementation of the Average Power Range Monitor, Rod Block Monitor Technical Specification (ARTS) will increase plant operating efficiency by updating the thermal limits requirements and improving plant instrumentation responses and accuracy. The changes requested by VY letter BVY 03-23 are based on current RTP (i.e., 1593 MWt), but are updated herein to reflect EPU conditions. In addition, certain RTP based parameters are affected by EPU; changes to these parameters are discussed in the PUSAR.

The second submittal[8] (i.e., Alternative Source Term) requests, in accordance with 10CFR50.67, a full scope application of an Alternative Source Term (AST) for VYNPS. The VYNPS EPU was analyzed, and the VYNPS PUSAR was prepared, based on AST methodology.

PUSAR Section 3.2.1, "Fracture Toughness," summarizes evaluations supporting the TS pressure versus temperature (P/T) limitations for the reactor coolant system under EPU conditions. The NRC staff is currently reviewing a proposed change[9] to VYNPS TS 3.6.A, "Pressure and Temperature Limitations," which revises the existing normal operating and hydrostatic and leak testing P/T curves. The analysis used to support Proposed Change No. 258 is updated in terms of power output to account for EPU. The P/T limits did not change as a consequence.

VY is actively assessing emergent BWR steam dryer issues together with industry and NRC staff as they may relate to EPU. As discussed in PUSAR Section 3.4.2 VY has performed a qualitative evaluation of its steam dryer and has identified certain modifications and inspections to ensure dryer structural integrity at EPU conditions. VY also expects to appropriately implement recommendations in a revision to a GE Service Information Letter addressing steam dryer issues.

An assessment of the effects of EPU on plant and transmission grid stability (as described in PUSAR section 6.1.1) is underway and will be provided to the NRC staff as part of its review in this matter. Upon completion of third-party reviews, VY expects to submit the results of the study to NRC in October 2003.

Attachments 9 and 10, respectively, provide marked-up pages and re-typed pages to the operating license and TSs, incorporating the revisions resulting from EPU. Some of the marked-up and re-typed TS pages in Attachments 9 and 10 are based on the aforementioned outstanding requests for license amendment, and therefore assume their prior acceptance. The subject marked-up pages are clearly identified in this regard.

As previously stated, modifications performed during the next refueling outage will allow for a power uprate of approximately 15%. As such, VYNPS will be in a position to implement the first uprate at the completion of the Spring 2004 refueling outage. VY requests that the EPU license amendment be issued with an effective date of July 2004. Timely issuance of the proposed EPU license amendment could facilitate initial uprate implementation to provide for summer 2004 peak electrical load demands. To support implementation of the Technical Specification changes, VY requests an implementation period of 120 days after the license amendment becoming effective.

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[7] Vermont Yankee letter to U.S. Nuclear Regulatory Commission, "Implementation of ARTS/MELLLA at Vermont Yankee," Proposed Change No. 257, BVY 03-23, March 20, 2003.

[8] Vermont Yankee letter to U.S. Nuclear Regulatory Commission, "Alternative Source Term," Proposed Change No. 260, BVY 03-70, July 31, 2003.

[9] Vermont Yankee letter to U.S. Nuclear Regulatory Commission, "RPV Fracture Toughness and Material Surveillance Requirements," Proposed Change No. 258, BVY 03-29, March 26, 2003.

If you have any questions, please contact Mr. Jim Devincentis at (802) 258-4236.

Sincerely,

Jay K. Thayer
Site Vice President

STATE OF VERMONT)
)ss
WINDHAM COUNTY)

Then personally appeared before me, Jay K. Thayer, who, being duly sworn, did state that he is Site Vice President of the Vermont Yankee Nuclear Power Station, that he is duly authorized to execute and file the foregoing document, and that the statements therein are true to the best of his knowledge and belief.

Sally A. Sandstrum, Notary Public
My Commission Expires February 10, 2007

SALLY A. SANDSTRUM
NOTARY PUBLIC
WINDHAM COUNTY, VERMONT

Attachments:

1. Proposed Changes and Summary Justifications
2. Determination of No Significant Hazards Consideration
3. Modifications and Tests
4. NEDC-33090P (Proprietary Information)
5. Affidavit for Withholding NEDC-33090P from Public Disclosure
6. Non-Proprietary Version of NEDC-33090
7. Justification for Exception to Large Transient Testing
8. VYNPS Environmental Assessment Report for EPU
9. Marked-up Technical Specification Pages
10. Re-typed Technical Specification Pages

cc: (with attachments, except as noted)

USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager – VYNPS (two copies)
Vermont Department of Public Service (w/o proprietary information)

Docket No. 50-271
BVY 03-80

Attachment 1

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Extended Power Uprate

Proposed Changes and Summary Justifications

Background

The proposed license amendment increases the maximum authorized power level from 1593 megawatts thermal (MWt) to 1912 MWt, representing the first power uprate of the Vermont Yankee Nuclear Power Station (VYNPS) since it was initially licensed in year 1972. This application for license amendment includes supporting Technical Specification (TS) and TS Bases changes necessary to implement the increased power level. The proposed uprate represents an increase of approximately 20% above current rated thermal power (RTP).

The following Table 1 presents the current operating license (OL) and TS requirements, the proposed change, and a brief discussion of the basis for the change. Change numbers, as indicated in the left column of the table, correspond to change numbers on the marked-up TS pages in Attachment 9.

Table 1
Proposed OL and TS Changes

No.	Current[1]	Proposed	Justification
1	(operating license, page 3) **OL Section 3.A – Maximum Power Level** Entergy Nuclear Operations, Inc. is authorized to operate the facility at reactor core power levels not to exceed 1593 megawatts thermal...	**OL Section 3.A – Maximum Power Level** Entergy Nuclear Operations, Inc. is authorized to operate the facility at reactor core power levels not to exceed 1912 megawatts thermal...	Revised maximum licensed power level based on General Electric (GE) report NEDC-33090P, "Safety Analysis Report for Vermont Yankee Nuclear Power Station Constant Pressure Power Uprate," dated September 2003 (i.e., PUSAR - contained in Attachment 4). (Reference PUSAR Section 1.1)
2	(TS page 3) **TS Definitions 1.0.P and 1.0.Q - Rated Neutron Flux and Rated Thermal Power** Rated neutron flux is the neutron flux that corresponds to a steady state power level of 1593 thermal megawatts. Rated thermal power means a steady state power level of 1593 thermal megawatts.	**TS Definitions 1.0.P and 1.0.Q - Rated Neutron Flux and Rated Thermal Power** Rated neutron flux is the neutron flux that corresponds to a steady state power level of 1912 thermal megawatts. Rated thermal power means a steady state power level of 1912 thermal megawatts.	Revised rated thermal power level based on GE report, NEDC-33090P. (Reference PUSAR Sections 1.1 and 1.2.1)

<table>
<tr><th colspan="4">Table 1 (continued)
Proposed OL and TS Changes</th></tr>
<tr><th>No.</th><th>Current(1)</th><th>Proposed</th><th>Justification</th></tr>
<tr><td>3</td><td>(TS page 6)
TS 2.1.A.1.a – APRM Flux Scram Trip Setting (Run Mode)

<u>Two loop operation:</u>
S ≤ 0.4 W + 64.4%
for 0% < W ≤ 31.1%
S ≤ 1.28 W + 37.0%
for 31.1% < W ≤ 54.0%
S ≤ 0.66 W + 70.5%
for 54.0% < W ≤ 75.0%
With a maximum of 120.0% power for W > 75.0%

<u>Single loop operation:</u>
S ≤ 0.4 W + 61.2%
for 0% < W ≤ 39.1%
S ≤ 1.28 W + 26.8%
for 39.1% < W ≤ 61.9%
S ≤ 0.66 W + 65.2%
for 61.9% < W ≤ 83.0%
With a maximum of 120.0% power for W > 83.0%

where:
S = setting in percent of rated thermal power (1593 MWt)</td><td>TS 2.1.A.1.a – APRM Flux Scram Trip Setting (Run Mode)

<u>Two loop operation:</u>
S ≤ 0.33 W + 53.7%
for 0% < W ≤ 30.9%
S ≤ 1.07 W + 30.8%
for 30.9% < W ≤ 66.7%
S ≤ 0.55 W + 65.5%
for 66.7% < W ≤ 99.0%
With a maximum of 120.0% power for W > 99.0%

<u>Single loop operation:</u>
S ≤ 0.33 W + 51.1%
for 0% < W ≤ 39.1%
S ≤ 1.07 W + 22.2%
for 39.1% < W ≤ 61.7%
S ≤ 0.55 W + 54.3%
for 61.7% < W ≤ 119.4%
With a maximum of 120.0% power for W > 119.4%

where:
S = setting in percent of rated thermal power (1912 MWt)</td><td>[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23.]
Adoption of ARTS/MELLLA is integral to the implementation of the EPU. All safety analyses in the PUSAR were performed consistent with the MELLLA power/flow map and corresponding APRM RPS trip setting changes.
(Reference PUSAR Section 5.3)</td></tr>
<tr><td>4</td><td>(TS page 7)
TS 1.1.B – Core Thermal Power Limit
When the reactor pressure is ≤ 800 psia or core flow ≤ 10% of rated, the core thermal power shall not exceed 25% of rated thermal power.

TS 2.1.A.1.a – APRM Flux Scram Trip Setting
In the event of operation at ≥ 25% Rated Thermal Power the APRM gain shall be equal to or greater than 1.0.</td><td>TS 1.1.B – Core Thermal Power Limit
When the reactor pressure is ≤ 800 psia or core flow ≤ 10% of rated, the core thermal power shall not exceed 23% of rated thermal power.

TS 2.1.A.1.a – APRM Flux Scram Trip Setting
In the event of operation at ≥ 23% Rated Thermal Power the APRM gain shall be equal to or greater than 1.0.</td><td>[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23.]
The existing ≤ 25% RTP limit for the TS Safety Limit and Limiting Safety System Setting was based on generic analyses that required fuel thermal margin monitoring above an average bundle power of 1.2 MWt. For VYNPS EPU this average bundle power/fuel thermal margin monitoring threshold is reduced to ≤ 23%.

(Reference PUSAR Sections 2.1 and 9.1)</td></tr>
</table>

Table 1 (continued)

Proposed OL and TS Changes

No.	Current(1)	Proposed	Justification
5	(TS page 10) **TS 2.1.E – Turbine Stop Valve Scram Bypass** Turbine stop valve scram shall, when operating at greater than 30% of Rated Thermal Power, be less than or equal to 10% valve closure from full open. **TS 2.1.F – Turbine Control Valve Fast Closure Scram Bypass** Turbine control valve fast closure scram shall, when operating at greater than 30% of Rated Thermal Power, trip upon actuation of the turbine control valve fast closure relay.	**TS 2.1.E – Turbine Stop Valve Scram Bypass** Turbine stop valve scram shall, when operating at greater than 25% of Rated Thermal Power, be less than or equal to 10% valve closure from full open. **TS 2.1.F – Turbine Control Valve Fast Closure Scram Bypass** Turbine control valve fast closure scram shall, when operating at greater than 25% of Rated Thermal Power, trip upon actuation of the turbine control valve fast closure relay.	These changes represent the revised percentage of RTP value corresponding to the power level where the direct RPS scrams on turbine stop valve position and turbine control valve fast closure are automatically bypassed from 30% RTP to 25% RTP. These direct scram signals are automatically bypassed at a low reactor thermal power level where a transient resulting from the closure of the turbine control valves or turbine stop valves is less significant. (Reference PUSAR Section 5.3)
6	(TS page 11) **TS Figure 2.1.1 – APRM Flow Reference Scram Setting** Revised APRM flow biased scram setpoints, as depicted in TS Figure 2.1.1, were provided by VY letter of March 20, 2003 (BVY 03-23).	**TS Figure 2.1.1 – APRM Flow Reference Scram Setting** Revised APRM flow biased scram setpoints, as depicted in TS Figure 2.1.1, are updated to EPU conditions corresponding to the trip settings in change #3 above.	[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23.] TS Figure 2.1.1 is a pictorial presentation of the trip settings in TS 2.1.A.1.a and do not establish additional requirements. (Reference PUSAR Section 5.3)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current[1]	Proposed	Justification
7	(TS page 21) **TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Trip Function 4, APRM High Flux (flow bias)** Two loop operation: $S \leq 0.4\ W + 64.4\%$ for $0\% < W \leq 31.1\%$ $S \leq 1.28\ W + 37.0\%$ for $31.1\% < W \leq 54.0\%$ $S \leq 0.66\ W + 70.5\%$ for $54.0\% < W \leq 75.0\%$ With a maximum of 120.0% power for W > 75.0% Single loop operation: $S \leq 0.4\ W + 61.2\%$ for $0\% < W \leq 39.1\%$ $S \leq 1.28\ W + 26.8\%$ for $39.1\% < W \leq 61.9\%$ $S \leq 0.66\ W + 65.2\%$ for $61.9\% < W \leq 83.0\%$ With a maximum of 120.0% power for W > 83.0%	**TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Trip Function 4, APRM High Flux (flow bias)** Two loop operation: $S \leq 0.33\ W + 53.7\%$ for $0\% < W \leq 30.9\%$ $S \leq 1.07\ W + 30.8\%$ for $30.9\% < W \leq 66.7\%$ $S \leq 0.55\ W + 65.5\%$ for $66.7\% < W \leq 99.0\%$ With a maximum of 120.0% power for W > 99.0% Single loop operation: $S \leq 0.33\ W + 51.1\%$ for $0\% < W \leq 39.1\%$ $S \leq 1.07\ W + 22.2\%$ for $39.1\% < W \leq 61.7\%$ $S \leq 0.55\ W + 54.3\%$ for $61.7\% < W \leq 119.4\%$ With a maximum of 120.0% power for W > 119.4%	[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23.] Adoption of ARTS/MELLLA is integral to the implementation of the EPU. All safety analyses in the PUSAR were performed consistent with the MELLLA power/flow map and corresponding APRM RPS trip setting changes. (Reference PUSAR Section 5.3)

Table 1 (continued) Proposed OL and TS Changes			
No.	Current[1]	Proposed	Justification
8	(TS page 24) **TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Note 3, step d.** Required actions when the number of instrument channels is less than the minimum includes: reduce reactor power to less than 30% of rated within 8 hours.	**TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Note 3, step d.** Required actions when the number of instrument channels is less than the minimum includes: reduce reactor power to less than 25% of rated within 8 hours.	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10 assume prior NRC acceptance.] This change represents the revised percentage of RTP value corresponding to the power level where the direct RPS scrams on turbine stop valve position and turbine control valve fast closure are automatically bypassed from 30% RTP to 25% RTP. These direct scram signals are not required at a low reactor thermal power level where a transient resulting from the closure of the turbine control valves or turbine stop valves is less significant. (Reference PUSAR Section 5.3)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current[(1)]	Proposed	Justification
9	(TS page 24) **TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Note 10** Turbine stop valve closure and turbine control valve fast closure scram signals may be bypassed at ≤ 30% of reactor Rated Thermal Power.	**TS Table 3.1.1 – Reactor Protection System (Scram) Instrument Requirements, Note 10** Turbine stop valve closure and turbine control valve fast closure scram signals may be bypassed at ≤ 25% of reactor Rated Thermal Power.	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10 assume prior NRC acceptance.] This change represents the revised percentage of RTP value corresponding to the power level where the direct RPS scrams on turbine stop valve position and turbine control valve fast closure are automatically bypassed from 30% RTP to 25% RTP. These direct scram signals are not required at a low reactor thermal power level where a transient resulting from the closure of the turbine control valves or turbine stop valves is less significant. (Reference PUSAR Section 5.3)
10	(TS page 83) **TS 3.3.B.3 – Rod Worth Minimizer Operability** While the reactor is below 20% power, the Rod Worth Minimizer (RWM) shall be operating while moving control rods...	**TS 3.3.B.3 – Rod Worth Minimizer Operability** While the reactor is below 17% power, the Rod Worth Minimizer (RWM) shall be operating while moving control rods...	The EPU RWM low power setpoint is established at the same absolute thermal power as currently licensed for the control rod drop accident. The revised TS value conservatively retains this absolute power level. (Reference PUSAR Sections 5.1.2 and 5.3.4)

Table 1 (continued) Proposed OL and TS Changes			
No.	Current[1]	Proposed	Justification
11	(TS page 92) **TS 4.4.A.1 – Standby Liquid Control System Pump Discharge Pressure** A minimum flow rate of 35 gpm at 1320 psig shall be verified for each pump.	**TS 4.4.A.1 – Standby Liquid Control System Pump Discharge Pressure** A minimum flow rate of 35 gpm at ≥1325 psig shall be verified for each pump.	[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23.] Analysis of the ATWS event at EPU conditions shows an increase in the maximum reactor lower plenum pressure. Consequently, there is a corresponding increase in the maximum pump discharge pressure, which has been evaluated to be within pump performance capability. Expressing the pump discharge pressure as "≥" conservatively bounds the current treatment of specifying the pump flow rate at a single discharge pressure. (Reference PUSAR Section 6.5)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current[1]	Proposed	Justification
12	**(TS page 94)** **TS 3.4.C.3 - Standby Liquid Control System operability factors** Q/86 x M251/M x C/13 x E/19.8 $\geq$ 1 Where Q = 35 gpm	**TS 3.4.C.3 - Standby Liquid Control System operability factors** Q/86 x M251/M x C/13 x E/19.8 $\geq$ 1.29 Where Q = $\geq$ 35 gpm	Analysis of the ATWS event at EPU conditions shows the need to increase the combined relationship of SLC system pump flow rate, concentration and enrichment to meet ATWS acceptance criteria. SLC system pump flow rate does not need to be fixed at a conservatively low value to satisfy ATWS criteria. Consequently, there is a corresponding increase in the relationship among the factors of flow rate, concentration, and enrichment to ensure timely injection of the required quantity of boron-10 into the reactor vessel during an ATWS event. Expressing the pump discharge pressure as "$\geq$" bounds minimum pump flow requirements and allows credit for greater pump flow in satisfying the relationship for ATWS acceptance. This is acceptable because it is the combination of the three factors that determines ATWS acceptability and not a single pump flow rate. Minimum pump flow rate is adequately specified in TS 4.4.A.1. (Reference PUSAR Section 9.3)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current[1]	Proposed	Justification
13	(TS pages 135-137) **TS Figures 3.6.1, 3.6.2, 3.6.3 – Reactor Vessel Pressure/Temperature Limits** Figures 3.6.1, 3.6.2, and 3.6.3 provide reactor vessel pressure-temperature limitations for a range of plant conditions. The Figures (as proposed by VY letter of March 26, 2003) are valid through 4.46 E8 MWHt.	**TS Figures 3.6.1, 3.6.2, 3.6.3 – Reactor Vessel Pressure/Temperature Limits** Figures 3.6.1, 3.6.2, and 3.6.3 are valid through 4.827 E8 MWHt.	[Note: This proposed TS change assumes prior NRC acceptance of the proposed TS change in VY letter of March 26, 2003, "RPV Fracture Toughness and Material Surveillance Requirements," BVY 03-29.] The limitations and requirements imposed by TS Figures 3.6.1, 3.6.2, and 3.6.3 are unchanged—only the validity period is extended to a conservative thermal power output of 4.827 E8 MWHt. The analytical methods provided in BVY 03-29 are unchanged,; however, the end-of-life, peak fast neutron fluence is increased to 3.18 E17 n/cm^2 at the reactor vessel inside surface. Due to existing safety margins, the small increase in neutron fluence at the vessel wall does not result in any change to current pressure-temperature limitations. The revised values of neutron fluence and power output bound expected conditions for the 40-year life of the plant. (Reference PUSAR Section 3.2)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current(1)	Proposed	Justification
14	(TS page 224) **TS 3.11.A, Average Planar Linear Heat Generation Rate (APLHGR)** During operation at ≥ 25% Rated Thermal Power,... If at any time during operation at ≥ 25% Rated Thermal Power... ...the reactor shall be brought to < 25% Rated Thermal Power...	**TS 3.11.A, Average Planar Linear Heat Generation Rate (APLHGR)** During operation at ≥ 23% Rated Thermal Power,... If at any time during operation at ≥ 23% Rated Thermal Power... ...the reactor shall be brought to < 23% Rated Thermal Power...	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10, assume prior NRC acceptance.] The APLHGR is a measure of the average LHGR of all the fuel rods in a fuel assembly at any axial location. Limits on the APLHGR are specified to ensure that the fuel design limits are not exceeded during anticipated operational occurrences and that the peak cladding temperature during a postulated design basis loss-of-coolant accident (LOCA) does not exceed 10CFR50.46 limits. This change provides consistency with the revision to TS 1.1.B, thereby maintaining an acceptable margin to the APLHGR limits. (Reference PUSAR Sections 2.1, 2.2, 2.3 4.3, and 9.1)

Table 1 (continued) Proposed OL and TS Changes			
No.	Current[1]	Proposed	Justification
15	(TS page 224) **TS 4.11.A, Average Planar Linear Heat Generation Rate (APLHGR)** The APLHGR for each type of fuel as a function of average planar exposure, power, and flow shall be determined once within 12 hours after ≥ 25% Rated Thermal Power and daily during operation at ≥ 25% Rated Thermal Power thereafter.	**TS 4.11.A, Average Planar Linear Heat Generation Rate (APLHGR)** The APLHGR for each type of fuel as a function of average planar exposure, power, and flow shall be determined once within 12 hours after ≥ 23% Rated Thermal Power and daily during operation at ≥ 23% Rated Thermal Power thereafter.	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10, assume prior NRC acceptance.] The APLHGR is a measure of the average LHGR of all the fuel rods in a fuel assembly at any axial location. Limits on the APLHGR are specified to ensure that the fuel design limits are not exceeded during anticipated operational occurrences and that the peak cladding temperature during a postulated design basis loss-of-coolant accident (LOCA) does not exceed 10CFR50.46 limits. This change provides consistency with the revision to TS 1.1.B, thereby maintaining an acceptable margin to the APLHGR limits. (Reference PUSAR Sections 2.1, 2.2, 2.3 4.3, and 9.1)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current[1]	Proposed	Justification
16	(TS page 225) **TS 3.11.B, Linear Heat Generation Rate (LHGR)** During operation at ≥ 25% Rated Thermal Power,... If at any time during operation at ≥ 25% Rated Thermal Power... ...the reactor shall be brought to < 25% Rated Thermal Power...	**TS 3.11.B, Linear Heat Generation Rate (LHGR)** During operation at ≥ 23% Rated Thermal Power,... If at any time during operation at ≥ 23% Rated Thermal Power... ...the reactor shall be brought to < 23% Rated Thermal Power...	The LHGR is a measure of the heat generation rate of a fuel rod in a fuel assembly at any axial location. Limits on the LHGR are specified to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences. Exceeding the LHGR limit could potentially result in fuel damage and subsequent release of radioactive materials. This change provides consistency with the revision to TS 1.1.B, thereby maintaining an acceptable margin to the LHGR limits. (Reference PUSAR Sections 2.1, 2.2, 4.3, and 9.1)
17	(TS page 225) **TS 4.11.B, Linear Heat Generation Rate (LHGR)** The LHGR as a function of core height shall be checked once within 12 hours after ≥ 25% Rated Thermal Power and daily during operation at ≥ 25% Rated Thermal Power thereafter.	**TS 4.11.B, Linear Heat Generation Rate (LHGR)** The LHGR as a function of core height shall be checked once within 12 hours after ≥ 23% Rated Thermal Power and daily during operation at ≥ 23% Rated Thermal Power thereafter.	The LHGR is a measure of the heat generation rate of a fuel rod in a fuel assembly at any axial location. Limits on the LHGR are specified to ensure that fuel design limits are not exceeded anywhere in the core during normal operation, including anticipated operational occurrences. Exceeding the LHGR limit could potentially result in fuel damage and subsequent release of radioactive materials. This change provides consistency with the revision to TS 1.1.B, thereby maintaining an acceptable margin to the LHGR limits. (Reference PUSAR Sections 2.1, 2.2, 4.3, and 9.1)

Table 1 (continued) Proposed OL and TS Changes			
No.	Current[1]	Proposed	Justification
18	(TS page 226) **TS 3.11.C, Minimum Critical Power Ratio (MCPR)** During operation at ≥ 25% Rated Thermal Power,... If at any time during operation at ≥ 25% Rated Thermal Power... ...the reactor shall be brought to < 25% Rated Thermal Power...	**TS 3.11.C, Minimum Critical Power Ratio (MCPR)** During operation at ≥ 23% Rated Thermal Power,... If at any time during operation at ≥ 23% Rated Thermal Power... ...the reactor shall be brought to < 23% Rated Thermal Power...	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10, assume prior NRC acceptance.] MCPR is the ratio of the fuel assembly power that would result in the onset of boiling transition to the actual fuel assembly power. The operating limit MCPR is established to ensure that no fuel damage results during anticipated operational occurrences. This change provides consistency with the revision to TS 1.1.B, maintaining an acceptable margin to the MCPR limits. (Reference PUSAR Sections 2.1, 2.2, 4.3, and 9.1)

Table 1 (continued)

Proposed OL and TS Changes

No.	Current(1)	Proposed	Justification
19	(TS page 226) **TS 4.11.C, Minimum Critical Power Ratio (MCPR)** MCPR shall be determined once within 12 hours after ≥ 25% Rated Thermal Power and daily during operation at ≥ 25% Rated Thermal Power thereafter.	**TS 4.11.C, Minimum Critical Power Ratio (MCPR)** MCPR shall be determined once within 12 hours after ≥ 23% Rated Thermal Power and daily during operation at ≥ 23% Rated Thermal Power thereafter.	[Note: This proposed TS change involves a TS page being revised as proposed in VY letter of March 20, 2003, "Implementation of ARTS/MELLLA at Vermont Yankee," BVY 03-23. The marked-up TS page in Attachment 9, and the re-typed TS page in Attachment 10, assume prior NRC acceptance.] MCPR is the ratio of the fuel assembly power that would result in the onset of boiling transition to the actual fuel assembly power. The operating limit MCPR is established to ensure that no fuel damage results during anticipated operational occurrences. This change provides consistency with the revision to TS 1.1.B, maintaining an acceptable margin to the MCPR limits. (Reference PUSAR Sections 2.1, 2.2, 4.3, and 9.1)
20	**TS Bases** The TS Bases provide explanation and rationale for associated TS requirements, and in some cases, how they are to be implemented.	**TS Bases** Associated changes to the TS Bases are being made to conform to the changed TS and to add clarity to existing requirements.	Changes are made to the TS Bases for clarity and to conform to the changes being made to the associated Specifications. The revisions to the TS Bases incorporate supporting information for the proposed TS changes. Bases do not establish actual requirements, and as such do not change technical requirements of the TS. The Bases changes are therefore acceptable, since they administratively document the reasons and provide additional understanding for the associated TS requirements.

Note: (1) – where noted, the current TS assumes prior NRC acceptance of an outstanding proposed license amendment request.

Attachment 2

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Extended Power Uprate

No Significant Hazards Consideration

Description of amendment request:

The licensees of the Vermont Yankee Nuclear Power Station are proposing that the operating license be amended to reflect an increase in the licensed maximum steady-state, reactor power level from 1,593 MWt to 1,912 MWt.

Basis for No Significant Hazards Determination:

Pursuant to 10CFR50.92, 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 10CFR50.92(c). These criteria require that the operation of the facility in accordance with the proposed amendment will 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.

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

   Comprehensive analytical analyses performed at or above uprated conditions support the proposed power uprate. The analyses included a review and evaluation of the structures, systems and components (SSCs) that could be affected by this change. Planned modifications and revised operating parameters, including operator actions, to support power uprate have been reviewed and confirm continued acceptable performance of plant SSCs under extended power uprate (EPU) conditions. Therefore, there is no significant increase in the probability of accidents previously evaluated.

   Evaluations and analyses of postulated accidents under EPU conditions were previously performed for a change in licensing basis to incorporate an alternative source term (AST) methodology. This latest action to uprate power does not significantly change the consequences of the design basis accidents previously considered, and the effects of the proposed power uprate are bounded by AST dose analyses. As shown in generic and plant-specific safety analyses for extended power uprate, SSCs important to safety will continue to perform their intended safety functions and, therefore, there is no significant increase in the consequences of accidents previously evaluated.

   Because SSCs important to safety will continue to meet their design safety functions during normal, abnormal, and accident conditions, there is no significant change in the ability of these SSCs to preclude or mitigate the consequences of accidents. Thus, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The proposed change does not involve any new accident scenarios or failure mechanisms. The SSCs previously considered for the prevention or mitigation of accidents remain capable of fulfilling their intended safety functions. EPU does not introduce any significantly new or different plant equipment, changes to the method of operation, maintenance practices, or undue operational conditions. The proposed changes have no significant adverse effects on SSCs important to safety and do not significantly challenge the performance or integrity of any safety-related SSC. In addition, because plant SSCs will be operated and maintained in a manner consistent with pre-uprate operations, the proposed changes do not introduce any new accident or malfunction mechanism that could create a new or different kind of accident. Consequently, the change does not result in any failure mode not previously analyzed.

Therefore, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Will the proposed changes involve a significant reduction in a margin of safety?

Comprehensive analyses of the proposed changes have concluded that relevant design and safety acceptance criteria will be met without any significant reduction in margins of safety. The analyses supporting EPU have demonstrated that the facility's SSCs are capable of safely performing at EPU conditions. The analyses identified and defined the major input parameters to the NSSS, reviewed NSSS design transients, and reviewed the capabilities of the NSSS fluid systems, NSSS/BOP interfaces, NSSS control systems, and NSSS and BOP components, as appropriate. Radiological consequences of design basis events remain within regulatory limits and are not increased significantly. The analyses confirmed that NSSS and BOP SSCs are capable, some with modifications, to achieve EPU conditions without significant reduction in margins of safety.

Analyses have shown that the integrity of primary fission product barriers will not be significantly impacted as a result of the power increase. Calculated loads on SSCs important to safety have been shown to remain within design allowables under EPU for all design basis event categories. Plant response to transients and accidents do not result in exceeding acceptance criteria. As appropriate, the evaluations that demonstrate acceptability of EPU have been performed using methods that have either been reviewed and approved by the NRC staff, or that are in compliance with regulatory review guidance and standards established for maintaining adequate margins of safety. These evaluations demonstrate that there are no significant reductions in a margin of safety.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Conclusion

On the basis of the above, VY has determined that operation of the facility in accordance with the proposed change does not involve a significant hazards consideration as defined in 10CFR50.92(c), in that it: (1) does not involve a significant increase in the probability or consequences of an accident previously evaluated; (2) does not create the possibility of a new or different kind of accident from any accident previously evaluated; and (3) does not involve a significant reduction in a margin of safety.

Attachment 3

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Extended Power Uprate

Modifications and Tests

EXTENDED POWER UPRATE
Modifications and Tests

The following is a list of currently planned modifications necessary to support extended power uprate (EPU) for the Vermont Yankee Nuclear Power Station (VYNPS). These modifications will be implemented during the next two refueling outages (i.e., the scheduled refueling outages beginning in the Spring of 2004 (RFO-24) and Fall 2005 (RFO-25). The following modifications constitute planned actions on the part of Vermont Yankee. Further evaluations may identify the need for additional modifications or, on the contrary, obviate the need for some modifications. As such, this list is not a formal commitment to implement the modifications exactly as described or per the proposed schedule. Additionally, various minor modifications and adjustments to plant equipment, which may be necessary, are not listed.

VERMONT YANKEE CPPU MODIFICATIONS/TESTING		
Modification	**Description**	**Testing**
Main Turbine	Modifications include: • Replace HP Turbine steam path: • New control valve settings. • Modify control valve operating mechanism with 5% margin above CPPU conditions. • Modify turbine control and overspeed setpoint for CPPU conditions. • Replace 8th Stage diaphragms of the L.P. Turbine (Note: This modification will be implemented in RFO-25).	HP Turbine testing to include: • Overspeed testing. • Control Valve and Stop Valve testing. • As found and as left performance test.
Main Turbine Cross-around Relief Valve (CARV) Discharge Piping	Install higher capacity relief valves.	Relief valves to be bench tested prior to installation.
Main Generator System	Rewind/Upgrade the Main Generator for CPPU conditions. Replace bushing current transformers. (Note: bushing current transformers to be replaced in RFO-25).	Factory to perform applicable electrical testing of windings. Generator to be performance monitored.
Main Generator Cooling Hydrogen System	Replace Generator Hydrogen Coolers with upgraded coolers.	Performance monitoring.
Isolation Phase Bus Duct Cooling	Install a new Isolation Phase Bus Duct Cooling System to remove Bus Duct heat under CPPU conditions.	Performance monitoring.
HP Feedwater Heater Replacement	#1A, #1B, #2A, & #2B FW Heater Replacement.	Testing to include: • Pressure testing. • Visual Inspection. • Magnetic Particle testing. • Radiography. • In-service inspection. • Demonstration of thermal performance.

VERMONT YANKEE CPPU MODIFICATIONS/TESTING		
Modification	**Description**	**Testing**
Steam Dryer	Any identified modifications needed to maintain steam dryer structural integrity at CPPU conditions.	Performance Monitoring for Steam Dryer Cover Plates integrity includes: • Main Steam Line flow indication (check for unbalance). • RPV water level indication (check for unbalance). • Steam dome pressure (check for sudden drop). • Moisture carryover (unexpected step increase)
RHRSW System	Modify RHRSW Pumps (Train A & B) Motor Bearing Oil Coolers to recuperate Service Water flow to the coolers.	Testing of piping performed per modification to include: • Visual inspection. • Particle testing. • Ultrasonic flow testing. • In-Service inspection.
NSSS/BOP Instruments	Upgrade specific NSSS/BOP Instruments for CPPU conditions.	Perform instrument rescaling, calibration and functional testing.
NSSS/Torus Attached Piping	Upgrade particular NSSS and Torus attached piping supports.	As applicable, welds to be examined visual, liquid penetration and magnetic penetration methods.
Flow Induced Vibration (FIV)	Install/remove FIV Instrumentation.	Collect FIV background data and FIV CPPU data and analyze data.
Reactor Recirculation (RR) System	Permits continued reactor power operation by Recirculation Pumps speed running back to a preset demand if reactor is operating at or greater than a predetermined power level and one Feed Pump trips.	Modification testing to be performed with breakers in "test position" and RR System not operating.
Main Condenser	Tube stake Main Condenser tubing to reduce the effects of flow induced vibration.	Perform tube leak testing per the modification by Main Condenser flood-up.

VERMONT YANKEE CPPU MODIFICATIONS/TESTING		
Modification	**Description**	**Testing**
Condensate Demineralizer	Install a Condensate Demineralizer Filtered Bypass Strainer to permit one demineralizer to be removed under CPPU conditions.	With filtered bypass strainer in service, monitor flows under various CPPU conditions.
Feedwater System	Protect Feed Pumps with two sequential levels of low suction pressure trips at various time delays to ensure only one pump trips at a time.	Normal testing to be performed per modification testing, to be performed with breakers in "test position."
Cooling Tower Fans/Motors	Replace fan blades with more efficient blades and drive motors with upgraded higher performance motors.	Cooling Tower performance monitoring.
Core Spray & RHR Pump Seal Replacements (Contingency)	Core Spray and RHR pump seals may require replacement.	Leak check at pump rated conditions.
EQ Upgrades	Re-route feed to SRV monitor to new breaker.	Voltage check and meggar.

CPPU POWER ASCENSION TEST PLAN

TEST	TEST DESCRIPTION	PRIOR TO STARTUP	PERCENT POWER CLTP (Allowance +0% -3%)																				(Allowance +0% -1%)				
			%	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
Main Turbine	Overspeed testing & backup overspeed testing.							X																			
Main Turbine	Demonstration of thermal performance improvements and generator increase.																										X
Main Turbine	Perform CPPU performance monitoring of the Main Turbine.							X					X					X					X	X	X	X	X
Flow Induced Vibration	Collect and analyze vibration data prior to power increases.												X					X					X	X	X	X	X
Condensate Demineralizer Filtered Bypass Strainer flow testing	Monitor the Condensate Demineralizer Filtered Bypass Strainer and demineralizer flows																						X	X	X	X	X
Core Thermal Limit Verification	Perform a Heat Balance Calculation.						X																X	X	X	X	X
Cooling Tower Modification	Perform CPPU performance monitoring.							X					X					X					X	X	X	X	X
Main Generator Modification	Perform CPPU performance monitoring.							X					X					X					X	X	X	X	X
Hydrogen Cooling Modification	Perform CPPU performance monitoring.							X					X					X					X	X	X	X	X
Iso Phase Bus Duct Modification	Perform CPPU performance monitoring.							X					X					X					X	X	X	X	X

CPPU POWER ASCENSION TEST PLAN																											
TEST	TEST DESCRIPTION	PRIOR TO STARTUP	PERCENT POWER CLTP (Allowance +0% -3%)																				(Allowance +0% -1%)				
			%	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
HP Feedwater Heater Modification	Perform demonstration of thermal performance.							X					X					X					X	X	X	X	X
Steam Dryer Modification	Monitor for steam dryer integrity.							X					X					X					X	X	X	X	X
Steam dryer/separator performance	Moisture carryover performance monitoring dryer separator integrity.																						X	X	X	X	X
BOP Monitoring	Performance monitoring of BOP Systems.							X					X					X					X	X	X	X	X
Radiation surveys.	Perform radiation surveys at various power levels.																						X	X	X	X	X
IRM Performance	IRM/APRM overlap will be done during the first controlled shutdown following APRM Calibration for EPU. If this is not possible, perform during next startup.																										
APRM Calibration	Calibrate each APRM channel to be consistent with the core thermal power, referenced to the LPU level, after the receipt of the CPPU SER from the NRC.																						X				

CPPU POWER ASCENSION TEST PLAN

TEST	TEST DESCRIPTION	PRIOR TO STARTUP	PERCENT POWER CLTP (Allowance +0% -3%)																				(Allowance +0% -1%)				
			%	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
Core Performance	Measure reactor and system parameters, calculate core thermal power and core performance parameters, evaluate data and project next power step's values.																				X		X	X	X	X	X
Pressure Regulator Tuning and Testing	Test and dynamically calibrate the pressure regulator system prior to start-up.	X																									
Pressure Regulator-Incremental Regulation Data Gathering	Average Main Steam line flow versus pressure regulator output. Data to be taken in less than 3% increments between 100% and 120% CLTP.																						X	XX	XX	XX	XX
Turbine First Stage Pressure	Validate the scram bypass function for the TSV Closure and TCV Fast Closure - Low Control Oil Pressure scram functions. Collect Data on the Turbine First Stage Pressure to Rated Thermal Power relationship over a band of 15%.					X	X	X	X																		
Pressure Regulator Testing: Bypass Valves	Pressure regulator control system response to a pressure setpoint change. This test to be performed on both pressure regulators.						X																				

CPPU POWER ASCENSION TEST PLAN

TEST	TEST DESCRIPTION	PRIOR TO STARTUP	PERCENT POWER CLTP (Allowance +0% -3%)																			(Allowance +0% -1%)				
			%	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120
Pressure Regulator Testing: TCVs	Pressure regulator control system response to a pressure setpoint change. This test to be performed on both pressure regulators.																X				X		X	X	X	X	
Pressure Regulator Testing-Incremental Data Collection.	Collect Data from Generator minimum load to maximum CPPU power in <3% increments between 15% and 120% CLTP.					XX	XX	XX	XX	XX	XX	XX	XX		XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
Reactor Water Level Setpoint Changes	Test performed in single element and in three element control.																				X		X	X	X	X	
Manual Feedwater Flow Step Changes	Manually raise and lower feedwater flow using manual control.																				X		X	X	X	X	
Maximum Feedwater Runout Data Collection	Pressure, flow and controller data collected on feedwater system performance. Measured data is compared against expected values.																				X		X	X	X	X	

COMPARISON OF INITIAL STARTUP TESTING AND PLANNED EPU TESTING			
Startup test Procedure Number	**Test Description**	**Test Planned for CPPU (yes/no)**	**Justification for not performing TEST**
STP 1	Chemical and Radiochemical	Yes	Notes: 1,2, and 3
STP 2	Radiation Measurements	Yes	Note 4
STP 3	Fuel Loading	No	Fuel Loading not affected by CPPU.
STP 4	Shutdown Margin	No	Shutdown Margin requirement not changed by CPPU.
STP 5	Control Rod Drive Testing	No	Performance of CRD hydraulic system is independent of power level. There is no effect on the performance of the CRD system with no increase in reactor pressure.
STP 6	Control Rod Sequence	No	Initial startup test requirement, not affected by CPPU
STP 7	Calibration of Rods	No	Initial startup test requirement, not affected by CPPU
STP 8	Rod Pattern Exchange	No	Initial startup test requirement, not affected by CPPU
STP 9	SRM Performance	No	Initial startup test requirement, not affected by CPPU
STP 10	IRM Calibration	Yes	Note 5
STP 11	LPRM Calibration	No	Not affected by CPPU
STP 12	APRM Calibration	Yes	APRMs will be re-calibrated to read 100% at CPPU
STP 13	Process Computer	No	Initial startup test requirement, not affected by CPPU
STP 14	RCIC	No	No reactor vessel pressure increase, test is not required.
STP 15	HPCI	No	No reactor vessel pressure increase, test is not required.
STP 16	Reactor Vessel Temperature	No	Initial startup test requirement, not affected by CPPU
STP 17	System Expansion	No	No reactor vessel pressure increase, nor corresponding primary coolant temperature increase, thermal expansion of drywell piping not affected by CPPU
STP 18	Power Distribution	No	Tip reproducibility, initial startup test requirement, not affected by CPPU
STP 19	Core Performance Evaluation	Yes	N/A-Test will be performed for CPPU
STP 21	Flux Response to Rods	No	Initial startup test requirement, not affected by CPPU
STP 22	Pressure Regulator	Yes	N/A-Test will be performed for CPPU
STP 23	Feedwater System	Yes	Control system test performed for CPPU-(Notes 6,&7)
STP 24	Bypass Valves	Yes	N/A- Test will be performed for CPPU
STP 25	Main Steam Isolation Valves	No	See Justification for Exception to Large Transient Testing Requirements, MSIV Closure Testing
STP 26	Relief Valves	No	No RPV pressure increase, not affected by CPPU
STP 27	Turbine Trip	No	Not required per CLTR Rev. 4, SER accepted CLTR with exception of MSIVC and generator load reject test
STP 28	Generator Trip	No	See Justification for Exception to Large Transient Testing Requirements, generator load rejection test
STP 29	Recirculation Flow Control	No	Recirculation flow control system capability is unaffected by CPPU.
STP 30	Recirculation System	No	Initial startup test requirement, not affected by CPPU
STP 31	Loss of Turbine-Generator and Off-Site Power	No	Not required per CLTR Rev. 4, SER accepted CLTR with exception of MSIVC and generator load reject test
STP 32	Recirculation M-G Set Speed Control	No	Recirculation system unaffected by CPPU. (Note 8)
STP X-5 (90)	Vibration Testing	No	RPV internals vibration analyzed at CPPU conditions.

Notes to Table

1. For CPPU Testing, added demonstration of proper steam separator-dryer operation.
2. Startup test included objective to determine that the sampling equipment, procedures and analytical techniques are adequate to supply the data required to demonstrate that the coolant chemistry meets water quality specifications and process requirements. This objective is not applicable to CPPU and is not required.
3. Startup test included objective to evaluate the performance of the fuel, operation of the demineralizers and filters, condenser integrity, operation of the off gas system and calibration of certain process instruments. The current Vermont Yankee chemistry and plant performance monitoring programs gather information on plant equipment and system performance. This information is evaluated in order to maintain equipment, system and plant performance within process requirements, chemistry/radiochemistry specifications and guidelines and fuel warrantee. This testing is not required for CPPU implementation.
4. Startup test included objective to determine the background radiation levels in the plant environs prior to operation for base data on activity buildup. This initial startup requirement is not applicable to CPPU and is not required.
5. The IRM overlap with the SRMs is not affected by CPPU. The APRMs will be re-referenced to read 100% at CPPU conditions, therefore, the IRM performance test will be performed to reestablish the IRM to APRM overlap.
6. Feedwater System startup testing included a feedwater pump trip test. For this test one of two operating feedwater pumps was tripped and the standby feedwater pump was allowed to automatically start. At CPPU conditions all three feedwater pumps will be required; there will be no standby pump available. This test is not required for CPPU.
7. Feedwater System startup testing also included a test that bypassed one feedwater heater. Transient analysis of most limiting events was performed for CPPU including loss of feedwater heating. This test is not required for CPPU.
8. The recirculation system will have to overcome a slight increase in two-phase flow resistance due to an increase in the core average void fraction. The system will accommodate the expected insignificant increase at CPPU condition when operating at maximum core flow.

Docket No. 50-271
BVY 03-80

Attachment 5

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Extended Power Uprate

Affidavit for Withholding NEDC-33090P from Public Disclosure

General Electric Company

AFFIDAVIT

I, David J. Robare, state as follows:

(1) I am Technical Projects Manager, General Electric Company ("GE") and have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in the GE proprietary report NEDC-33090P, *Safety Analysis Report for Vermont Yankee Nuclear Power Station Constant Pressure Power Uprate,* Class III (GE Proprietary Information), Revision 0, dated September 2003. The proprietary information is identified by a double underline inside double square brackets. In each case, the superscript notation {3} refers to Paragraph (3) of the enclosed affidavit, which provides the basis for the proprietary determination.

(3) In making this application for withholding of proprietary information of which it is the owner, GE relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4) and 2.790(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by General Electric's competitors without license from General Electric constitutes a competitive economic advantage over other companies;

b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;

c. Information which reveals cost or price information, production capacities, budget levels, or commercial strategies of General Electric, its customers, or its suppliers;

d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in both paragraphs (4)a. and (4)b., above.

(5) To address 10 CFR 2.790 (b) (4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GE, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GE, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GE is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GE are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

8) The information identified in paragraph (2), above, is classified as proprietary because it contains detailed results and conclusions from evaluations of the safety-significant changes necessary to demonstrate the regulatory acceptability for the power uprate of a GE BWR, utilizing analytical models, methods and processes, including computer codes, which GE has developed, obtained NRC approval of, and applied to perform evaluations of transient and accident events in the GE Boiling Water Reactor ("BWR").

The development and approval of these system, component, and thermal hydraulic models and computer codes was achieved at a significant cost to GE, on the order of several million dollars.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GE asset.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GE's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GE's

comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GE.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GE's competitive advantage will be lost if its competitors are able to use the results of the GE experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GE would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GE of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this the 4th day of September 2003.

David J. Robare
General Electric Company

Docket No. 50-271
<u>BVY 03-80</u>

Attachment 6

Vermont Yankee Nuclear Power Station

Proposed Technical Specification Change No. 263

Extended Power Uprate

Non-Proprietary Version of NEDC-33090