WINDHAM
REGIONAL
COMMISSION

To: Vermont Public Service Board
Entergy Nuclear Vermont Yankee
Cc: Windham Regional Commissioners
Vernon Selectboard
Vernon Planning Commission
Windham Region Legislative Delegation
Vermont Department of Public Service
Vermont Emergency Management Division
Vermont State Nuclear Advisory Panel
From: James P. Matteau, Executive Director
Date: April 16, 2008

Re: Petition of Entergy Nuclear Vermont Yankee, LLC, and Entergy Nuclear Operations, Inc., for an amendment of their certificates of public good and other approvals required under 10 V.S.A. §§ 6501-6504 and 30 V.S.A. §§ 231(a), 248 and 254, for authority to continue after March 21, 2012, operation of the Vermont Yankee Nuclear Power Station, including the storage of spent-nuclear fuel.

SUMMARY OF RECOMMENDATIONS

1. The Board should require a new Decommissioning Cost Analysis, one that is based on reliable estimates and not driven by fund balance projections alone. The analysis and projections that were provided with the petition on March 4, 2008 do not meet these criteria because:

    a. Inflation projections and annual yield estimates may be overly optimistic;

    b. Specific and reliable guarantees of future financial responsibility are absent;

    c. The scenarios do not adequately assess the post shutdown impacts in terms of numbers of employees over time and thus do not provide a meaningful basis for loca officials and citizens to consider;

    d. The scenarios assume SAFSTOR despite showing that immediate decommissioning is less expensive in all scenarios.

    e. The scenarios assume that no property taxes would be paid to the Town of Vernon or the State of Vermont post shutdown, despite acknowledging that "taxes would most likely be assessed."

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2. The economic benefit that is alleged in terms of beneficial electric rates is not presented in any clear or reliable manner. The petitioner should be required to commit to some minimal rate guarantees to benefit Vermont ratepayers prior to discovery or technical hearings.

3. The remediation plan that underlies the Decommissioning Cost Analysis should be revised. The plan submitted is inadequate because:
    a. It is not based on a closure that represents the "green field" that has been promised from the outset;
    b. It is not based on any comprehensive analysis of soil and water samples.

4. The Spent Fuel Management Plan should be updated and significantly improved. The existing plan is inadequate because:
    a. It is a June 2006 document that has not been updated at all, and still references the now completed spent fuel pad in the future tense.
    b. Stripped of the table of contents, a glossary and some site maps, it amounts to a four-page document with little detail.
    c. It does not address reducing the density of assemblies stored in the spent fuel pool as requested by board orders in Docket 7082.
    d. It does not address the need for a separate, long-term ISFSI in any detailed or meaningful way, and may not comply with Board rule 5.402(D).

5. Full core offload capability must be adequately addressed. The existing proposal is inadequate because:
    a. While full core offload capability would be reestablished when five casks are loaded this year, the petitioner makes no offers or commitments to dry cask loading beyond the 2008 campaign, without which full core offload capability soon would be lost again;
    b. In Docket 7082 the Board requested an analysis that included reducing the number of assemblies in the spent fuel pool, to include full core offload, but this has not been provided.
    c. Each additional cask carries a significant cost to be borne by the petitioner. There is no cost-benefit analysis of the expenses related to maintenance of full core offload capability provided in the application. Without an understanding of this analysis it is possible the petitioner may choose to forgo full core offload to minimize expenses.

Greater detail regarding the summary presented above is provided under "Discussion and Recommendations", beginning on page 5. We note that most of these items stem from

two overriding areas about which members of the public have consistently and emphatically expressed concerns: The first overriding area regards the safety and reliability of the plant, including both its operation and management of spent fuel and other radioactive materials. Safety and reliability are two issues that are inextricably intertwined and about which the public seeks and deserves solid information and reliable assurance. It is apparent that a great many members of the public are of the opinion that assurances provided thus far by the U.S. Nuclear Regulatory Commission and the Vermont Department of Public Service have fallen short.

The second area regards the long term and ultimate costs of plant operation, waste management, decommissioning, and site remediation. The public has been assured many times over that the site would ultimately be returned to a green field condition, which clearly means a significantly more extensive remediation than is proposed, and also that the Vermont public would not be left with any of the cost. Evidence presented to date leaves both premises in grave doubt.

BACKGROUND

The WRC comprises twenty-seven member towns, ranging from Vernon at the southeast corner, to Rockingham in the northeast, Weston in the northwest and Readsboro in the southwest. Many of our constituents live within the 10 mile evacuation zone, while others live as far as 45 miles from the Vermont Yankee plant. The region's towns, its citizens, businesses, and institutions present a broad and diverse range of opinions regarding nuclear power generally, and Vermont Yankee specifically. The WRC's participation in this case is not to support or oppose the proposal to extend operations beyond 2012, but rather to promote adherence to relevant regional plan policies and to advocate for decisions that will support orderly development of the region. The WRC also works to help all parties and the general public have access to clear and objective information, as detailed in our Regional Plan.

The 2006 Regional Plan is discussed in some detail within the prefiled written testimony of Harold Dodson as it relates to Land Use Policies and the Orderly Development of the Region. Mr. Dodson's testimony does not include all the relevant regional plan policies, so we list additional policies here:

4.6 Energy Policies (page 47)

4. With regard to all energy generation, transmission, and distribution projects:

   a. Adhere to a high environmental standard that includes avoiding negative environmental impacts to the extent possible and adequately minimizing and mitigating those that cannot be avoided;

   b. Conduct thorough and proper studies and analyses of all anticipated socioeconomic and environmental impacts, both positive and negative;

   c. Adequately address all areas of concern regarding proposed development;

   d. Effectively and adequately address all issues related to facility operation and reliability, recognizing that is some instances they are inextricably intertwined with public health and safety concerns.

5.5 Economic Policies (pages 55-56)

1.Promote activities and development that contribute to a strong and diverse economy, providing satisfying and rewarding job opportunities for all citizens in all parts of the region and supporting a strong municipal tax base, while maintaining environmental standards and promoting environmental justice.

6. Generate a wide variety of stable, year-round jobs with wages and other compensation that provide a livable income, and that include skills training programs and other benefits that contribute to the personal development and quality of life for all workers.

7.13 Community Resource Policies (pages 93-99)

Low Level Radioactive Waste

1. Ensure the safe and effective storage, transportation, and disposal of low level radioactive waste (LLRW).

2. Work to assure that standards at least as stringent as those proposed for a LLRW storage site in Vermont are applied to any alternative site.

3. Minimize the generation of LLRW.

High Level Radioactive Waste

1. Encourage a requirement that permanent spent nuclear fuel (SNF) storage be resolved prior to any consideration of extending or reviewing the operating license of Vermont Yankee.

2. Support increased local and regional public involvement regarding all SNF permitting and licensing decisions.

HISTORY

Entergy Nuclear Vermont Yankee, LLC and Entergy Nuclear Operations, Inc (hereafter referred to collectively as Entergy) first met with the WRC Energy Committee and submitted information to the WRC regarding its petition for extended operation on December 7, 2007. The WRC's Energy Committee conducted a public hearing on January 7, 2008, and followed that process with a comment letter to the Board and to the petitioner on January 18, 2008.

Entergy then submitted its petition to the Board with a copy to the WRC on March 4, 2008. Pursuant to Board Rule 5.402(A)(2) and based on the significant amount of new information provided, the WRC held a second meeting with Entergy representatives on March 20, a meeting with Uldis Vanags, the Vermont State Nuclear Engineer employed by the Department of Public Service, on March 24, and conducted a second public hearing on March 27. We also conducted a joint public informational meeting with the Department of Public Service on March 31, 2008 to hear from Entergy corporate

representatives about a proposed restructuring covered under a separate docket (Docket 7404).

We appreciate that throughout the process Entergy has been an active and willing participant, has made an effort to attend all public events, and has frequently made their expertise and information available to us. The discourse at all of our public meetings and hearings has been informed and respectful, and this has assisted in a better understanding of the application and its implications.

We noted in our January 18, 2008 letter that testimony at the January 7 hearing was dominated by comments in opposition to the proposed extension and included little if any support from persons other than Entergy employees. At the March 27 hearing we heard from nearly 60 people, the great majority of whom supported the extension. Most but not all were either Entergy employees or spokespersons from local non-profit organizations that receive support from Entergy. The collective testimony received at the two hearings is considered to be relatively balanced.

Contained herein are the following:

1. Summary of recommendations (above);
2. Discussion and recommendations to the Public Service Board (hereafter, "Board") at this point in the process;
3. A transcript of comments received at the March 27 hearing;
4. Copies of email comments received; and
5. Copies of written comments received.

DISCUSSION AND RECOMMENDATIONS

1. The Board should require a new Decommissioning Cost Analysis, and it must be based on reliable estimates. The analysis and projections that were provided with the petition on March 4, 2008 do not meet these criteria because:
    a. Inflation projections and annual yield estimates may be overly optimistic
        i. The Analysis uses an average rate of inflation of 3.0% (Exhibit EN-TLG-3, page 1 of 9), which seems reasonable looking back 10 to 15 years. But a look back 30 years, a time frame closer to the time needed for a 20-year extension and immediate decommissioning, shows an average annual U.S, inflation rate of 4.2%. (U.S. Bureau of Labor Statistics; ftp.bls.gov/pub/special.requests/cpi/cpiai.txt)
        ii. The Analysis requires an average yield for the decommissioning fund of 6.3 % to decommission with SAFSTOR in 2012, and 8.66% to decommission with DECON in 2012. (Exhibit EN-TLG-3, page 1 of 9).

iii. The split between required yield and anticipated inflation is unreasonably high. In docket 6545 (page 64 footnote 125) the Board stated "While Vermont Yankee's returns have exceeded those stated returns in recent years, it is more prudent for a limited-life, regulated entity to use more conservative returns like those allowed in the recent FERC settlement. In VYNPC's last settlement at FERC, the parties agreed that an appropriate, conservative assumption would be to assume a decommissioning-cost rate of inflation of 4.25 percent and growth in investment funds of 4.96 percent for the qualified and 3.64 percent for the nonqualified trusts"

The NRC, in a letter to Entergy Nuclear Operations, Inc, dated March 25, 2008 stated that "NRC regulations allow a licensee to take a 2% real rate of return earnings credit on trust balances unless a higher rate is authorized by a regulated licensee's public utility commission."

The board should require testing under a variety of less optimistic assumptions, and should ensure that the fund is adequate under realistic and conservative forecasts.

b. Specific and reliable guarantees of future financial responsibility are absent

i. During the meetings and discussion of the past couple of months, the current and future status of the decommissioning fund has risen to become a major source of concern and worry. We have been repeatedly assured that the plant's owners are fully responsible for plant decommissioning and all related costs, and that if the decommissioning fund is inadequate, "Entergy" would make up any shortfall without any risk to taxpayers. Yet at our meeting with Entergy corporate representatives on March 31, 2008 we were informed that the full force and credit of the parent corporation, Entergy Corporation, has never been committed, and the parent corporation would only be accountable through whatever new financial guarantees the Board might impose in this or other dockets. We understand that at the time of the sale the Board relied on assurances of protection by the parent corporation to eliminate the risk of a decommissioning shortfall, and we are now surprised to hear Entergy assert otherwise.

We believe the public good would best be served by knowing the extent of and responsibility for the decommissioning fund today and in the future, and that is not stated clearly in the application or, we believe, understood by the public.

ii. The Decommissioning Cost Analysis includes a number of scenarios (Exhibit EN-TLG-3, "Decommissioning Funding Requirements"), ranging in total cost (2006 dollars) from a low of

$655 million (2032 shutdown and immediate decommissioning, with the spent fuel assembly pick-up occurring from 2017 to 2057) to a high estimate of $991 million (2012 shutdown and SAFSTOR to 2032, with the spent fuel assembly pick-up occurring from 2057 to 2082). Given the above projected rate of inflation and return on investment, it seems unlikely the decommissioning fund will be sufficient without a significant subsidy.

iii. When Vermont Yankee was purchased in 2002 the decommissioning fund was topped off and with the anticipated rate of return and efficiencies brought by Entergy, the fund was believed to be sufficient for full decommissioning in 2012, with the possibility of a surplus. By the time Entergy received a CPG for dry cask storage in 2006 the fund was believed to be inadequate for decommissioning in 2012, and would require a projected 20 year period of SAFSTOR. We remain concerned that full decommissioning may have moved still further out in time, and that decommissioning to green field status now is not actually proposed and may not even be possible given funds now proposed to be available.

c. The decommissioning scenarios do not adequately assess the post shutdown impacts in terms of numbers of employees over time and thus do not provide a meaningful basis for consideration by local officials and citizens.

i. The economic impact study prepared by witness Richard Heaps provides impressive detail about current actual employment levels, and then uses a multiplier to calculate a broad impact covering direct and indirect impacts. Yet, when post shut down changes are calculated we are provided only with combined direct-indirect impacts. We believe these post-shutdown calculations are based on total spending as reported by Entergy, and not on a specific measure of anticipated employment. We have asked for the number of actual employees and contractors anticipated to be working at the plant through the various decommissioning scenarios and have been told such numbers are not available.

ii. Throughout the preceding five month review process the public has expressed great interest in employment and economic impact. We believe Entergy should clarify how and when impacts will be felt within the Town of Vernon and the region, and should focus on actual employment levels and direct impacts, rather than very broad measures of combined direct and indirect impact based on total spending.

iii. We believe it is critical to understand the specific employment levels at the plant, and how employment will change through the shut down process; through the transition to SAFSTOR; through

the period of SAFSTOR; through the transition to decommissioning; through decommissioning; through the period of dry fuel storage; and through the conclusion of the green field process. This information is essential in determining the economic and societal impacts to the region at various points in time, and in calculating the actual cost of decommissioning under each of the eight scenarios. We believe a clear presentation of actual employment and direct impacts will better inform the publics understanding (and the Board's understanding) of how the region will fare through the inevitable shut down. The projections of employment-over-time should be essential in the Board's decision as to what conditions might be attached to a CPG to best serve the public good.

iv. We also note the economic and societal impacts will vary depending on the length of employment terms, the number of full time vs. part time workers, and the difference between contractors and employees. We also wonder what pay rates are anticipated for these workers, and what additional benefits are calculated into the employment costs.

v. While Entergy has promised to provide greater detail about employment at some point in the future, they have suggested that in the interim the best way to calculate actual employment is to review data provided in the Decommissioning Cost Analysis (Exhibit EN-TLG-2). We have done so reluctantly, with an understanding that the public deserves answers but that we are not experts in this field.

The spreadsheets provided with the Decommissioning Cost Analysis define eight scenarios. Each scenario appears to tally all costs, including the number of manhours required. We note the number of manhours is divided into "Craft Manhours" and "Utility and Contractor Manhours." We are unsure of the distinction, but note that Scenario 1, which covers a shut down in 2012 with the immediate decommissioning (DECON) option, anticipates 1,055,280 "Craft Manhours" and 5,412,171 "Utlitity and Contractor Manhours." When we total this labor and divide by an anticipated 10 year decommissioning period, we calculate 646,745 manhours per year. If we further divide this by 52 weeks and then 35 hours per week, we come up with an anticipated average employment level of 355 Full Time Equivalents (FTE's) through the ten year period. We are unsure if this is a reasonable forecast of actual employment required for immediate decommissioning, and are unsure how the number will fluctuate through the period.

When we next checked Scenario 5, which covers a proposed shut down in 2012 followed by SAFSTOR for a period we believe to be 20 years, we note total manhours are projected to be 7,702,642.

The difference between the manhours required by DECON (scenario 1) and SAFSTOR (scenario 5) is 1,235,191 manhours, or just 61,759 manhours per year over the 20 year period of SAFSTOR assumed in scenario 5. Further calculations revel this is just 1,187 manhours per week, or a total of only 33 FTE's working 35 hours each week to secure and maintain the entire plant and dry fuel storage through the SAFSTOR period. Given this would be a 24/7 operation, that amounts to an average of about 6 persons per shift, total.

We may be misreading the data, and hope that if Entergy anticipates a different employment level through DECON or SAFSTOR they will better explain their proposed plan, but as noted, in the absence of such an explanation, and at the suggestion of Entergy, we have attempted to analyze the data as best we can so the public has some idea what to expect through this process.

d. The scenarios assume SAFSTOR is the best option despite showing that immediate decommissioning is less expensive in all scenarios.

   i. Decommissioning is less expensive than SAFSTOR in all scenarios. Decommissioning should follow shutdown as soon as possible, including if that requires a CPG condition for additional contributions to the fund by the owner.

      1. Entergy's analysis appears to indicate that immediate decommissioning is significantly less expensive than SAFSTOR, under all shutdown year and fuel-pick up scenarios. [Decommissioning Cost Analysis For The Vermont Yankee Nuclear Power Station; Exhibit-EN-TLG-2, Tables 3.1 to 3.8]

      2. The economic impact studies provided by Entergy suggest that DECON provides a stronger buffer against job loss than SAFSTOR and would be a better option for the regional economy.

      3. Uldis Vanags, the nuclear engineer employed by the Vermont Department of Public Service noted in his meeting with us on March 24, 2008 that DECON is preferred because it would make use of workers who have been at the plant for many years and who have intimate knowledge of plant systems and history, while SAFSTOR would not have the benefit of this legacy knowledge.

e. The scenarios assume that no property taxes would be paid to the Town of Vernon or the State of Vermont post shutdown, despite acknowledging that "taxes would most likely be assessed".

   i. The Decommissioning Cost Analysis assumes no tax payments to the Town of Vernon after operation is ended, despite

acknowledging that some fair market assessment would be made as a basis for property taxes:

1. "Local property taxes are paid in accordance with a Tax Stabilization Agreement with the Town of Vernon. The agreement is only valid during the operating life of the plant. Once shutdown, local property taxes would most likely be assessed at the fair market value of the property under normal property tax rules. However, there are no specific provisions for determining the value of a shutdown unit (and significant remediation project). As such, the decommissioning estimates do not include an allowance for post-operation tax payments." [Decommissioning Cost Analysis For The Vermont Yankee Nuclear Power Station; Exhibit-EN-TLG-2, section 3 page 19; emphasis added]
2. The property tax structure in the State of Vermont is unique in that property taxes are also collected at the state level. According to an issue brief produced by the Vermont Legislative Joint Fiscal Office in June 2007, beginning in 1972 Vermont Yankee paid property taxes on the basis of plant value, with tax rates ranging from 1.9% to 3.5%. The plant currently pays no specific state level property tax, but is instead assessed an electrical energy tax based on the amount of electricity produced. This tax is defined under Title 32, Chapter 213, §8661 with a stipulation as follows: "...but no tax shall be due if the plant produces no electricity due to cessation of operations." Entergy appears to rely on this provision to assume there will be no state level property tax if the plant shuts down. We believe this is an unwise assumption, and that economic impact studies and the Decommissioning Cost Analysis should include a provision for a state property tax through SAFSTOR, and through any period of dry fuel storage beyond SAFSTOR.

2. The economic benefit that is alleged in terms of beneficial electric rates is not presented in any clear or reliable manner. The petitioner should be required to commit to some minimal rate guarantees that would benefit Vermont ratepayers, prior to discovery or technical hearings.

    a. Implicit in many of the petitioner's statements, especially in statements to the general public, are assumptions that an operating extension will carry with it beneficial rates for Vermont ratepayers. Thus far Entergy has declined to offer any detail about what those rates might be.

    b. Entergy seeks a 20-year operating extension but is only required to share excess revenues with Vermont utilities for ten years. (MOU, 2002, paragraph number 4)

c. The information filed by Entergy relates the economic importance of extending the operation to the market rates for electric power, which typically are set by relatively high and volatile natural gas prices. But Entergy's cost of production is known and stable, so Entergy and its potential successors could instead be required to offer beneficial rates to Vermont utilities that are linked to the cost of generation and not to external market prices.

d. While it is not known for what contract period Vermont retail utilities are currently negotiating with Entergy, recent public statements by utility executives indicate the possibility of a 5-year timeframe, or even less. These indicators, taken together, do not bode well for Vermont ratepayers.

e. We recognize and appreciate that Entergy is a public company with a fundamental need to generate a profit for its shareholders, and note that offering an appropriately steep discount price to Vermont ratepayers in return for permission to operate still leaves room for profit on those sales, and allows significant additional profit on sales not covered by a Power Purchase Agreement.

We are disappointed that the public does not yet have any meaningful guidance regarding projected contract pricing, but we do understand that Entergy is negotiating with Vermont utilities. We note that much of the public discussion and support for continued operation is based on the assumption of highly favorable electric rates delivered to the consumer, and we hope the Board will look carefully at whatever Power Purchase Agreement Entergy ultimately offers as part of this application.

3. The remediation plan that underlies the Decommissioning Cost Analysis should be revised. The plan submitted is inadequate because:

a. It is not based on a closure that represents the "green field" that has been promised from the outset.

i. In the sale Docket (6545) the board described "green field" as follows:

> "113. The MOU contains, and ENVY has committed to, no specific "green field" standards. However, Paragraph 9 of the MOU provides that ENVY will perform site restoration according to Paragraph 3 of the MOU which provides that "Site restoration shall mean that, once the [Vermont Yankee] site is no longer used for nuclear purposes or non-nuclear commercial, industrial or other similar uses consistent with the orderly development of the property, the site will be restored by <u>removal of all structures</u> and, if appropriate, regrading and reseeding the

> land." [Docket 6545; Exh. VY-42 at ¶ ¶3, 9; tr. 4/18/02 at 101–04, 172–89 (Sherman) emphasis added.]

However, in the filing for this case, Entergy describes its plans for final site remediation as follows:

> "3.4.7 Site Conditions Following Decommissioning
>
> "The NRC will terminate (or amend) the site license if it determines that site remediation has been performed in accordance with the license termination plan, and that the terminal radiation survey and associated documentation demonstrate that the facility is suitable for release. The NRC's involvement in the decommissioning process ends at this point. Building codes and state environmental regulations dictate the next step in the decommissioning process, as well as the owner's own future plans for the site.
>
> "Only existing site structures are considered in the dismantling cost. The electrical switchyard remains after Vermont Yankee is decommissioned in support of the regional transmission and distribution system. The disposition or ongoing maintenance costs of the off-site corporate offices, Governor Hunt House, hydrogen storage facility or engineering building are not included in the estimates. Structures are removed to a nominal depth of three feet below grade. The voids are backfilled with clean debris and capped with soil. The site is then re-graded to conform to the adjacent landscape. Vegetation is established to inhibit erosion. These "non-radiological costs" are included in the total cost of decommissioning.
>
> "The large underground tunnels between the cooling water intake and turbine building and discharge structure are isolated, backfilled, and abandoned in place. Site utility and service piping are also abandoned. Electrical manholes are backfilled with suitable earthen material. Asphalt surfaces in the immediate vicinity of site buildings are broken up and the material used for fill, as required. The site access road remains in place. Site remediation costs include the removal and disposition of 135,000 cubic feet of potentially contaminated soil located on the Entergy VY site." [Decommissioning Cost Analysis For The Vermont Yankee Nuclear Power Station; Exhibit-EN-TLG-2, section 3 page 15; emphasis added]

Rather than return the site to "green field" conditions as the term would have been used and understood by the public when the initial promises were made and as later described in Docket 6545,

Entergy's actual proposal would in fact leave behind a site that we would today consider a "Brownfield" and it is entirely likely that public funds would be needed in the future in order to complete site remediation and return it to economic use. The facility's owners should be required as part of any new or amended CPG to completely remove all structures above and below ground level and to remediate all contamination, nuclear and non-nuclear, to the maximum extent possible and to a level that would render the site truly ready to accommodate new development.

b. It is not based on any comprehensive testing of soil and water samples.

   i. The Decommissioning Cost Analysis does not include any estimates of soil treatment or remediation costs that are based actual testing:

      1. "The cost reported for soil remediation is based upon a preliminary assessment of the potential for contamination in the soil around the plant (based upon historical evidence). A detailed site characterization was not performed. This allowance will be confirmed and/or modified based upon more detailed analyses to be performed in conjunction with the formulation of a license termination plan." [Decommissioning Cost Analysis For The Vermont Yankee Nuclear Power Station; Exhibit-EN-TLG-2, section 6 page 2]

      2. We discussed the need for soil and water sampling with Entergy representatives at a public meeting on March 24, 2008. We were told that Entergy completed significant testing prior to purchasing the plant, and that it currently maintains several sample wells and regularly tests soils. Entergy representatives said they also test milk and silage at a nearby farm. We are not aware of the results of these tests, or how they might be used to anticipate plant specific remediation costs through decommissioning, but we are concerned that there seems to be no direct linkage between the ongoing testing effort and the Decommissioning Cost Analysis. This gives the impression that the provided decommissioning plan is based on a generic template, and is not sufficiently specific to Vermont Yankee.

4. The Spent Fuel Management Plan should be updated and significantly improved. The existing plan is inadequate because:

   a. It is a June 2006 document that does not address reducing the density of assemblies stored in the spent fuel pool as requested by prior Board orders.

i. We understand that casks loaded while the plant is operating, and any needed spent fuel pad (ISFSI) or other related costs, are covered as operating expenses. Casks loaded and an ISFSI constructed after the plant shuts down (in 2012 currently, or some later date under an extension), are paid for with decommissioning funds. Thus, reducing the density of the fuel pool while the plant is operational will ease pressure on the decommissioning fund once the plant closes. This will have the effect of shortening the time the fund needs to grow to achieve decommissioning and which may be critical if the fund projections are overly optimistic, as we suggest elsewhere in this letter.

When the plant was originally licensed the pool was configured to hold just 900 fuel assemblies, with a full core offload comprised of 368 assemblies. According to prefiled testimony of Mr. John Hoffman the pool has been reconfigured twice, and by March 2012 there will be 3,800 assemblies under management in the pool and in casks.

The Board decision in the 2006 Dry Cask Case addresses the need for reducing the density of the spent fuel pool, both to maintain full core offload and to reduce the risk of fire:

"...To address this concern, we will require that Entergy VY amend its Plan to address the possibility that the spent nuclear fuel will remain at the Vermont Yankee site through 2082. Entergy VY has agreed to this condition. Entergy VY should also amend the Plan to address its management of all the spent fuel, not only the rods that have been moved to dry casks.

"CAN also asks that we require Entergy VY to reduce the density of the spent fuel pool by moving more of the fuel rods into dry casks for storage on the ISFSI. WRC voiced a similar concern, asking that we require Entergy VY to optimize the transfer of spent nuclear fuel from the spent fuel pool to dry storage. <u>The evidence here demonstrates that dry cask storage is a better storage option than is storage in the spent fuel pool. Similarly, storage in a less-dense spent fuel pool configuration is also preferable.</u>

....

<u>"If Entergy VY seeks to extend its operating license, this issue should be revisited. No party contested the fact that a reduction of the number of rods stored in the spent fuel pool was desirable.</u> We would expect that the NRC would have completed additional analyses by that time, as well. <u>Therefore, we will require that, if Entergy VY requests an extension of its CPG beyond March 21, 2012, the amended Spent Fuel Management Plan must address the possibility of reducing the number of fuel rods stored in the spent fuel pool. This analysis should also consider the possibility of</u>

constructing an additional ISFSI to accommodate the larger number of dry casks that would result." [Docket 7082, pages 80-82, emphasis added]

ii. The Windham Regional Commission has heard a significant number of public comments that express concern about the spent fuel pool and high density storage, and we believe these concerns should be addressed. We expected a Spent Fuel Management Plan would include a comparison of several density scenarios, beginning with guaranteed full core offload as a minimum, and extending back in several steps to the initial density of 900 assemblies. We expected the plan to include a count of how many assemblies would be in the pool and casks at each fuel change, and when an additional ISFSI would be needed under each scenario. We were disappointed to learn that Entergy has not provided any analysis of alternative densities in spite of repeated requests by WRC and the instruction of the Board as noted above. While we recognize that Entergy may stand before the Board and cite federal preemption rather than agree to a reduced pool density, we believe that requiring a detailed plan outlining the costs and benefits of each density level is still appropriate, and would be beneficial to other decision makers including the Vermont Legislature. This is especially so given the beneficial economic impact a reduced pool density might have on the decommissioning fund.

b. It does not address the obvious need for a separate, long-term ISFSI in any detailed or meaningful way.

i. The spent fuel management plan should identify how many fuel assemblies will be in the pool and how many in casks at each refueling cycle, throughout the plant's operation. The plan should specify when scheduled cask loading campaigns would be undertaken to ensure the maintenance of full core offload capability. The plan also should identify when an additional ISFSI will be required, where it will be located, and it should outline the costs associated with each scenario as well as the effect on the decommissioning fund.

The petitioner again acknowledges the need for a new ISFI in the Decommissioning Cost Analysis:

> "The availability of an ISFSI at the site was presumed as a pre-condition to the completion of decommissioning..." [Decommissioning Cost Analysis For The Vermont Yankee Nuclear Power Station; Exhibit-EN-TLG-2, section 6 page 2]

The PSB decision in Docket 7082 cited above requires Entergy to consider the construction of an additional ISFSI, but Entergy has

not addressed that requirement in this application other than to say such a pad might be located in "the north 40." Entergy goes on to say the plant is situated on 125 acres, so locating an appropriate place for an ISFSI would not be a problem (prefiled testimony of John Hoffman, pages 15-16). We noted in our meeting with Entergy on December 13, 2008, in our letter of January 18, 2008 and at our meeting with Entergy on March 20, 2008, that the area denoted as 'the north 40" is also targeted for development of a switchyard enhancement and thus might not be available for a future ISFSI. We also note the prefiled testimony of Harold Dodson (page 4) identifies only 20 acres of the site as being undeveloped, and 17 as being "marginally developed." On page 19 of his prefiled testimony Mr. Dodson goes on to say "The VY station is densely developed with limited open space, mainly along the river and at the north and south ends of the site."

We believe it will be difficult to identify a location for an additional ISFSI that could be placed within an undeveloped secure area with appropriate soil composition and minimal flood hazard, far enough from the fence line to allow radiation decay. It is this difficulty that leads us to believe the location of an additional ISFSI and the timing for its construction warrants special consideration by The Board.

We also note that Board rule 5.402(D) requires that a petitioner "...must address and provide sufficient evidence on all improvements, temporary or permanent, that are reasonably related to facilities for which a certificate of public good is required under 30 V.S.A. §248." It is readily apparent that there will be a need for a second ISFSI, and that this need is directly related to the facility. We brought this concern and the above cited rule to the attention of Entergy at our meeting on December 13, 2008, and discussed it in our prefile letter of January 18, 2008.

Because it is known that a new ISFSI will be required under any scenario, because the Board has previously acknowledged the need for an additional ISFSI and in a new location, because the petitioner itself has stated its agreement that a new ISFSI will be needed, and because it is prudent to assume that no spent fuel will leave the site in the foreseeable future, specific documentation of an acceptable on-site location for a long-term ISFSI should be required prior to any new or amended CPG.

c. Stripped of the table of contents, a glossary and some preconstruction site maps, the Spent Fuel Management Plan amounts to a four-page document with little detail, and no updates since it was first issued in 2006, before the construction of the ISFSI.

5. Full core offload capability is not adequately addressed as required by the decision in Docket 7082. The existing proposal is inadequate because:

    a. While full core offload capability would be reestablished if five casks are loaded this year as planned, the petitioner makes no offers or commitments to dry cask loading beyond the 2008 campaign, without which full core offload capability soon would be lost again.

        i. The WRC has raised the issue of spent fuel management regarding density in the spent fuel pool in terms of its relationship to reliable operation of the plant and its potential effect on electric energy rates and availability. In other dockets we have called for a requirement that full core offload capability be established and maintained. All parties have agreed that maintaining that capability is a good idea but no regulatory agency requires it and Entergy makes no commitment. Full core offload capability has not existed for some time now, but it will be reestablished with the planned 2008 loading of five casks. Maintaining that capability will require loading additional casks prior to future refueling outages, and that should not be left to the short-term financial decisions of the plant's owners.

        This is an area where reliability and safety converge. Recognizing that safety regulation is in the federal purview, this issue is nonetheless a concern of many local residents.

    b. Each additional cask carries a significant cost to be borne by the petitioner. There is no cost-benefit analysis of the expenses related to maintenance of full core offload capability provided in the application. Without this analysis it is possible the owner may choose to forego maintenance of full core offload capability simply to minimize expenses.

        i. To the extent that a spent fuel pool fire poses a safety risk, removing a small number of assemblies might not make a significant change; but at some point a reduction in density does make a difference. Similarly, there is probably another point at which further reductions in density would not significantly further reduce that risk. Since each loaded cask costs about a million dollars, the question becomes 'where is the greatest benefit achieved, and at what cost.' Maintaining full core offload capability might be a minimal and prudent step in that direction.

CONCLUSION

The WRC represents a large population with a diverse view of nuclear power, and we do not seek to directly support or oppose this application for a CPG to extend operation. But all members of the public, those who support extended operation of Vermont Yankee as well as those who oppose it, desire and deserve a thorough review of plans to extend the

operation of the 35 year old plant. We note too that issuing a CPG for continued operation from 2012 to 2032 does not assure that operation of the plant will in fact continue through that time period, and that no matter what decision is made in this case, the eventual discontinuance of operation and decommissioning of the facility is inevitable.

We seek a full review of all issues related to safety and reliability as they affect continued operation of the facility, and a complete analysis of decommissioning plans that include the storage and management of spent nuclear fuel and return of the site to green field conditions. We understand that closing the plant, whenever that happens, will have a significant impact on Vermont's electric energy profile as well as on the economy of the state and the region, and therefore we seek a full understanding of all issues so that the State of Vermont and all its municipalities, businesses and citizens can anticipate and plan for the eventual and inevitable loss of Vermont Yankee from the New England electric power grid.

Appendix A

Entergy Nuclear Vermont Yankee
Petition For A Certificate Of Public Good
To Operate Beyond March 21, 2012

Transcript of Comments Made at the January 27, 2008 Hearing

This section been provided to the Board, the DPS, the petitioner and the Town of Vernon electronically. It also is available for review at the WRC office, is posted on the WRC website at http://www.rpc.windham.vt.us/energy/index.htm and is available electronically to any parties upon request. Paper copies will only be made as required and, for parties other than the Town of Vernon, with a requested fee to cover production cost.

Appendix B

Entergy Nuclear Vermont Yankee
Petition For A Certificate Of Public Good
To Operate Beyond March 21, 2012

Copies of Email Comments Received

This section been provided to the Board, the DPS, the petitioner and the Town of Vernon electronically. It also is available for review at the WRC office, is posted on the WRC website at http://www.rpc.windham.vt.us/energy/index.htm and is available electronically to any parties upon request. Paper copies will only be made as required and, for parties other than the Town of Vernon, with a requested fee to cover production cost.

Appendix D

Entergy Nuclear Vermont Yankee
Petition For A Certificate Of Public Good
To Operate Beyond March 21, 2012

Copies of Written Comments Received

This section been provided to the Board, the DPS, the petitioner and the Town of Vernon electronically. It also is available for review at the WRC office, is posted on the WRC website at http://www.rpc.windham.vt.us/energy/index.htm and is available electronically to any parties upon request. Paper copies will only be made as required and, for parties other than the Town of Vernon, with a requested fee to cover production cost.