

**Alliance for a Green Economy, Citizens Awareness Network,  
Pilgrim Watch, Vermont Citizens Action Network**

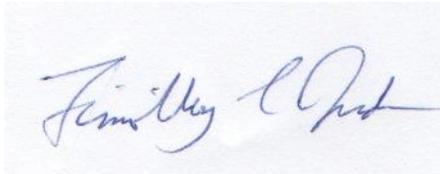
October 16, 2013

Mr. Bill Borchardt  
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Mr. Borchardt:

Alliance for a Green Economy, Beyond Nuclear, Citizens Awareness Network, Nuclear Information & Resource Service, Pilgrim Watch, and Vermont Citizens Action Network, hereafter referred to as “the petitioners,” submits the enclosed and attached information as a supplement to our March 18 emergency enforcement petition.



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**PETITION TO THE U.S. NUCLEAR REGULATORY COMMISSION  
REQUESTING ENFORCEMENT ACTION AGAINST ENTERGY NUCLEAR  
OPERATIONS, INC.; ENTERGY NUCLEAR FITZPATRICK, LLC; ENTERGY  
NUCLEAR VERMONT YANKEE, LLC; AND ENTERGY GENERATION CO.**

October 16, 2013

Alliance for a Green Economy, Beyond Nuclear, Citizens Awareness Network, Nuclear Information & Resource Service, Pilgrim Watch, and Vermont Citizens Action Network (hereafter, “the petitioners”) hereby submit this supplement to our March 18, 2013 Petition for Emergency Enforcement Action (hereafter, “the petition”) to the US Nuclear Regulatory Commission (NRC), as supplemented on April 23, 2013 (hereafter, “Supplement #1” or “the first supplement”); June 28, 2013 (“Supplement #2”); and July 22, 2013 (“Supplement #3”). In the petition, the Petitioners requested that the NRC suspend licenses Nos. DPR-59 and DPR-28 (hereafter, “the licenses”), the operating licenses for the James A. FitzPatrick Nuclear Power Plant (hereafter, “FitzPatrick”) and the Vermont Yankee Nuclear Power Station (hereafter, “Vermont Yankee” or “VY”). The petitioners also requested NRC begin an investigation to determine whether the operating license for the Pilgrim Nuclear Power Station (hereafter, “Pilgrim”), license No. DPR-35, must also be suspended.

On August 27, 2013 Entergy announced that it intends to retire Vermont Yankee,<sup>1</sup> citing essentially the same economic problems we detailed in our petition, as supplemented on April 23, 2013: sustained low electricity market prices and an operating cost structure that make the reactor impossible to operate profitably. Entergy said it plans to continue operating VY for up to 14 months, until its next planned shutdown for refueling in late 2014.<sup>2</sup> Entergy’s decision and information it has provided in its public statements confirm it is operating VY and FitzPatrick in violation of financial qualifications regulations. This development also reinforces the need to investigate Entergy’s financial qualifications to operate Pilgrim.

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<sup>1</sup> Entergy. “Entergy to Close, Decommission Vermont Yankee.” Media Release. August 27, 2013. [http://www.entergy.com/news\\_room/newsrelease.aspx?NR\\_ID=2769](http://www.entergy.com/news_room/newsrelease.aspx?NR_ID=2769)

<sup>2</sup> Ibid.

Prior to the VY closure announcement, on July 30, Entergy also announced company-wide layoffs of 800 employees, including 30-40 employees at each of FitzPatrick, Pilgrim, and VY.<sup>3</sup> These developments reveal new concerns that NRC must include in its investigations and possible enforcement actions to protect the public and worker health and safety.

### **Summary**

Petitioners request that NRC adjust the scope of its review to incorporate new and emerging information arising from Entergy's VY closure announcement and the developing financial conditions confronting the licensees:

1. NRC must undertake an investigation into the safety-conscious work environment and the quality assurance and quality control programs (hereafter, "QAQC") at Vermont Yankee, FitzPatrick, and Pilgrim.
2. NRC's investigation of Entergy's financial qualifications must include a detailed audit of planned and anticipated capital expenditures at each of the reactors, as well as a cost and amortization schedule for each capital project.

These emergency enforcement actions to be taken by NRC are necessary for the following reasons detailed herein:

1. Entergy's VY closure announcement and subsequent statements confirm that Entergy is not financially qualified to operate VY and FitzPatrick, and possibly Pilgrim, and indicates that the financial conditions under which the corporation is operating the reactors are worse than projected by UBS.
2. Entergy's intention to continue operating VY for more than a year is unprecedented and poses new and unreviewed risks to the public health and safety.
3. The succession of company-wide layoffs and the closure of VY may have a chilling effect on the workforce at all three reactors, presenting an increased risk of cross-cutting human performance and QAQC issues.

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<sup>3</sup> Smallheer, Susan. "Entergy Announces Vermont Yankee Layoffs." *Barre Montpelier Times Argus*. July 31, 2013. <http://www.timesargus.com/article/20130731/NEWS03/707319895/0/SPORTS>

4. Entergy's announcement that it intends to continue operating VY for more than a year, and its uncertainty as to whether it will continue operating FitzPatrick and Pilgrim, raise questions regarding the implementation of capital upgrades and maintenance required to comply with NRC regulations and to protect the public health and safety.

### **1. Entergy's Recent Statements Confirm It Is Operating FitzPatrick, Vermont Yankee, and Potentially Pilgrim in Violation of Financial Qualifications Regulations, and Suggest the Plants' Financial Conditions Are Possibly Worse than UBS's Projections**

In explaining the decision to close Vermont Yankee, Entergy confirmed that the economic conditions under which it is operating the plant violate NRC's financial qualifications regulations. Entergy's media statements highlight sustained wholesale market trends, the generating capacity of the plant, and the insufficiency of capacity market subsidies.<sup>4</sup>

While Entergy's statements affirm the validity of UBS Investment Research's analyses, they also indicate that the financial conditions of Vermont Yankee may be even worse than projected by UBS. Entergy states:

As a result of this decision and based on continuing operations into fourth quarter 2014, the estimated operational earnings change, excluding these special items, is expected to be modestly accretive within two years after shutdown, and cash flow is expected to increase approximately \$150 to \$200 million in total through 2017, compared to Vermont Yankee's continued operation.

As referenced in the April 23 supplement to our petition, UBS has projected approximately \$109 million in negative cash flow for VY in the 2013-16 timeframe. Compared to Entergy's estimate, UBS's projections equate to approximately -\$100 million in cash flow from 3Q2013 through 2016.<sup>5</sup> If carried forward through 2017, then, UBS's projections would lead to an estimate of \$140-\$150 million in cash flow losses – up to \$60 million less than Entergy itself estimates.

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<sup>4</sup> Entergy Corp. "Entergy to Close, Decommission Vermont Yankee." August 27, 2013. [http://www.entergy.com/News\\_Room/newsrelease.aspx?NR\\_ID=2769](http://www.entergy.com/News_Room/newsrelease.aspx?NR_ID=2769)

<sup>5</sup> Supplement #1, p. 3. [http://allianceforagreeneconomy.org/sites/default/files/2206\\_FitzPatrick-Pilgrim-VY\\_sup1\\_0.pdf](http://allianceforagreeneconomy.org/sites/default/files/2206_FitzPatrick-Pilgrim-VY_sup1_0.pdf)

At the very least, Entergy has confirmed the basic accuracy of UBS's analyses of Vermont Yankee. This lends further credence to UBS's analyses of FitzPatrick, and its concern about Pilgrim's economic viability. If, however, Entergy's internal projections of cash flow losses for VY are up to 40% greater than UBS's, then the finances of FitzPatrick and Pilgrim may also be substantially worse than UBS anticipates. That means FitzPatrick's negative cash flow could exceed \$190 million 2013-16, or well over \$200 million for the 2017 period Entergy estimates for Vermont Yankee.

Entergy initially attempted to allay concerns about the closure of FitzPatrick and Pilgrim in the wake of the VY announcement, though those statements did not have much substance in light of the economic realities. Furthermore, Entergy made similar statements in the months prior to the VY announcement, assuring the public that it had no intentions to cease operations. Entergy also initiated company-wide layoffs at VY along with the rest of the of the company's business units, though now it must begin efforts to retain staff until the plant closes in late 2014.

More recently, the tone of Entergy's statements regarding the position of FitzPatrick and Pilgrim have become increasingly non-committal and uncertain. Entergy has admitted FitzPatrick and Pilgrim are in financial distress, and it is continuing to cut costs, including this statement on September 12:

"Our single-unit plants are challenged in New York and New England," in part because of low market prices, Mohl said.

He said the company was "working through the trough in the market" by implementing efficiency improvements at all plants.<sup>6</sup>

Entergy followed this with similar statements affirming the fundamental economic problems confronting the reactors. Finally, at a New York State Hearing on September 30,<sup>7</sup> under direct questioning by Sen. Patty Ritchie, Entergy was asked about the reasons

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<sup>6</sup> DiSavino, Scott. "Interview: Entergy to keep other U.S. reactors running after Vermont closure." Reuters. September 12, 2013. <http://in.reuters.com/article/2013/09/12/utilities-entergy-vermontyankee-idINL2N0H728U20130912>

<sup>7</sup> <http://www.nysenate.gov/event/2013/sep/30/examine-and-analyze-plans-contentions-and-arguments-put-forward-relation-indian-po>

for retiring Vermont Yankee and its implications for FitzPatrick.<sup>8</sup> Entergy not only repeated its view that FitzPatrick faces fundamentally the same challenges as VY, but further indicated that it is actively reviewing whether to continue operating FitzPatrick after the 2014 refueling outage:

We have announced and we did announce the day we made the Vermont Yankee announcement that we intend, we currently intend, to refuel FitzPatrick next October. **But that is an item, quite frankly, we have to review on a regular basis.**<sup>9</sup>

This latest statement indicates that the economic performance challenges of FitzPatrick have already crossed a level at which NRC should be concerned about the impact of Entergy's financial qualifications for nuclear safety. The fact that the licensee is in the process of reconsidering whether to close the reactor only twelve months out from refueling implies that ongoing maintenance and operation costs are under intense scrutiny. In addition, capital expenses related to the outage and safety-significant repairs need to be made imminently, including planning and capital expenditures for replacement of the main condenser, which is causing an increasing number of unplanned shutdowns and power changes.

In an April 2012 inspection report on FitzPatrick<sup>10</sup>, NRC noted that Entergy planned a replacement of all condenser tubes during the 2014 refueling outage. However, in an interview with the *Syracuse Post-Standard* on September 29,<sup>11</sup> Entergy executive Bill Mohl backed off from that commitment:

The facility also is under pressure to replace its condenser tubes, which have leaked 16 times in the past three years, forcing the reactor to reduce power to make repairs. FitzPatrick had so many unplanned power changes during 2012,

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<sup>8</sup> Testimony of T. Michael Twomey, Vice President of External Affairs, Entergy Wholesale Commodities. Video record of New York State Senate hearing (at 1:18:50): "Senate Standing Committee on Energy & Telecommunications - 09/ 30/ 13."  
[http://www.youtube.com/watch?v=D3n0J8c6I3Q&desktop\\_uri=%2Fwatch%3Fv%3DD3n0J8c6I3Q&app=desktop](http://www.youtube.com/watch?v=D3n0J8c6I3Q&desktop_uri=%2Fwatch%3Fv%3DD3n0J8c6I3Q&app=desktop)

<sup>9</sup> Ibid., at 1:21:24.

<sup>10</sup> Nuclear Regulatory Commission. "James A FitzPatrick Nuclear Power Plant – NRC Problem Identification and Resolution Inspection Report 05000333/ 2012008." April 23, 2012  
<http://pbadupws.nrc.gov/docs/ML1211/ML12114A279.pdf>

<sup>11</sup> Tim Knauss. "Central New York nuclear plants struggle to avoid financial meltdown." *Syracuse Post-Standard*. September 29.  
[http://www.syracuse.com/news/index.ssf/2013/09/oswego\\_county\\_nuclear\\_plants\\_struggle\\_to\\_avoid\\_financial\\_meltdown.html](http://www.syracuse.com/news/index.ssf/2013/09/oswego_county_nuclear_plants_struggle_to_avoid_financial_meltdown.html)

some because of condenser leaks, that it was placed under heightened oversight earlier this year by the Nuclear Regulatory Commission.

Mohl said Entergy is considering replacing the condenser tubes during the next refueling outage, which is scheduled for roughly a year from now. No final decision has been made, he said.

Entergy is clearly weighing whether to continue operations at FitzPatrick and whether to invest in the plant. This limbo is a public safety issue as key equipment goes unrepaired and unplanned power changes mount at the plant. The possibility that Entergy may decide to operate FitzPatrick for another refueling cycle by deferring capital expenses is precisely the sort of condition the financial qualifications regulations are intended to prevent. The possibility that Entergy may decide to operate FitzPatrick for one more refueling cycle by deferring capital expenses is precisely the sort of condition the financial qualifications regulations are intended to prevent.

These pronouncements make it imperative that NRC enforce the financial qualifications regulations to prevent the growing conflict between Entergy's obligations to its shareholders and the requirements under its Atomic Energy Act licenses to ensure the safe operation of these nuclear power plants. Entergy is clearly placing investor confidence and short-term economic concerns ahead of public health and safety, necessitating NRC emergency enforcement action under 10 CFR 50.33(f) and 50.110(a)(3).

**1.a. Applying UBS's Model to Pilgrim Suggests Substantial Free Cash Flow Deficits. Further, 2013 Performance Shortfalls Reinforce the Need for NRC to Investigate Entergy's Financial Qualifications at Pilgrim.**

These developments reinforce concerns that Entergy is operating Pilgrim in violation of financial qualifications regulations. As UBS's projections indicate, its Vermont Yankee analysis is based on a projected operating cost of approximately \$50 per megawatt-hour (MWh), and its FitzPatrick analysis on an estimate of \$48/MWh in operating cost for the slightly larger and younger reactor (838 MW and 38 years of operation compared to VY's 605 MW and 41 years). Pilgrim is closer in size and vintage to VY, at 688 MW and 41 years, but using an estimate of \$49/MWh would provide a conservative estimate of free

cash flow. As detailed in the petition, market power prices for Vermont Yankee and Pilgrim are essentially equal if not slightly lower in the NEISO zones closest to Pilgrim, and the reactors operate on similar refueling schedules.<sup>12</sup> Utilizing UBS's calculations for Vermont Yankee and applying Pilgrim's generation capacity and the above cost rate estimate, the petitioners have constructed rough free cash flow projections for Pilgrim, which show potential losses on the same order as VY and FitzPatrick.

#### **Pilgrim Nuclear Station Free Cash Flow Projections, based on UBS Model**

<b>Year</b>	<b>MWh</b>	<b>CF</b>	<b>Revenue (\$M)</b>	<b>Cost (\$M)</b>	<b>Free Cash Flow (\$M)</b>
<b>2013</b>	5,311	88.1%	233	251	<b>-18</b>
<b>2014</b>	5,686	94.3%	249	270	<b>-21</b>
<b>2015</b>	5,443	90.3%	239	258	<b>-19</b>
<b>2016</b>	5,549	92.1%	244	263	<b>-19</b>
<b>TOTAL</b>		91.2%	965	1,078	<b>-77</b>

These projections do not include detailed estimates of tax-related costs for Pilgrim, but we do not expect that to introduce large inaccuracies. A substantial amount of the net tax liability for VY is the increase in the Vermont generation tax, which UBS estimates at \$8 million/year, we adjusted for that by applying an estimated credit of \$9 million/year, adjusting for Pilgrim's greater generation capacity. However, because we recognize the potential for inaccuracies, our intention in providing these estimates is to illustrate the basis for UBS's concerns about Pilgrim and to demonstrate the need for NRC to conduct a full investigation of Entergy's financial qualifications the reactor.

What is more, Pilgrim is significantly underperforming relative to UBS's projections, due to both market price declines and significant shortfalls in production goals. Power prices in the New England markets appear to have declined further in 2013. Bloomberg reports average spot market prices in July 2013 in the \$35/MWh, lower than the average annual price in 2012 but for a month when prices are generally highest:

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<sup>12</sup> See petitions at pages 8-9.

More retirements of single-unit reactors may be coming for Entergy and the industry, Julien Dumoulin-Smith and Andrew Gay, analysts for UBS AG, wrote in a research note today. Vermont Yankee's cost of producing power was probably about \$50 a megawatt-hour, they wrote. Spot prices for on-peak power averaged \$35.27 a megawatt-hour during the past month in New England.<sup>13</sup>

Pilgrim's 13% greater generating capacity compared to VY does not offset the 30-40% difference between market prices and operating costs that have led to major cash flow deficits at Vermont Yankee. The decline in market prices is compounded by unplanned outages and power reductions, as a result of which Pilgrim has fallen far short of UBS's projected performance levels this year.<sup>14</sup>

### **Pilgrim Operational Performance (January 1-September 27, 2013)**

<b>Power Generation Level</b>	<b>Number of Days</b>	<b>Equivalent Days at Full Operation</b>
<b>0% (shut down)</b>	65	0
<b>1-50%</b>	15	3.75
<b>51-80%</b>	15	9.75
<b>81-90%</b>	21	17.85
<b>91-99%</b>	42	39.9
<b>100% (full power)</b>	112	112
<b>TOTAL</b>	270	183.25

Using this information, petitioners estimate that Pilgrim operated at approximately 68% capacity through September 27; even if the plant operates at 100% through the end of the year, Entergy would achieve a capacity factor of at best 76% for the year, or more than a 13% shortfall relative to the 88.1% capacity factor projection. Without access to precise outage dates and market price data, we are unable to provide a precise projection of revenue shortfalls, but it would be on the order of \$30 million – increasing the projected

<sup>13</sup> Olson, Bradley, and Mark Chediak. "Entergy to Close Vermont's Only Nuclear Plant." *Bloomberg.com*. August 27, 2013. <http://www.bloomberg.com/news/2013-08-27/entergy-to-close-its-vermont-yankee-nuclear-power-plant.html>

<sup>14</sup> Burrell, Chris. "Shutdowns could place Pilgrim nuclear plant with underperformers." *Patriot-Ledger*. September 28, 2013. <http://www.patriotledger.com/news/x1343100275/Shutdowns-could-place-Pilgrim-nuclear-plant-with-underperformers>

free cash flow deficit to nearly \$50 million for the year, and raising total projected losses through 2016 to over \$100 million.

As at FitzPatrick, there is sufficient evidence to warrant concern that violations of financial qualifications requirements at Pilgrim are resulting or compounding safety problems. The performance shortfalls detailed above are related to an extensive record of safety-significant incidents and equipment-related outages and power reductions thus far in 2013. Appendix 1, “2013 Event Reports and Equipment Problems at Pilgrim Nuclear Power Station,” provides a record of such publicly documented incidents. We request that NRC incorporate data such as this into its investigation of Pilgrim’s and FitzPatrick’s financial qualifications to determine whether there is a causal or compounding relationship between Entergy’s economic considerations and recent operational problems.

## **2. Entergy’s Decision to Continue Operating Vermont Yankee Until 4Q2014 Is Unprecedented and Endangers the Public Health and Safety**

As detailed above, Entergy has all but stated that it would not be able to generate sufficient revenues at Vermont Yankee to cover the reactor’s operating costs, which indicates that it is no longer financially qualified to hold the operating license.

Nevertheless, the corporation plans to continue operating the reactor until the fourth quarter of 2014 (4Q2014). In September, Entergy modified its application to the Vermont Public Service Board to extend the plant’s Certificate of Public Good until December 31, 2014, suggesting it plans to continue operating VY more than sixteen months from the closure announcement.

Entergy avers that this decision was made to allow time to plan for cessation of operations and to prepare the necessary filings for decommissioning. Such an extended period of time is not necessary for those purposes, as evidenced by several other reactors which have ceased power operations in far less time following the closure announcement. Most recently and significantly, Dominion closed the Kewaunee reactor six months<sup>15</sup>

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<sup>15</sup> Wald, Matthew. “As Price of Nuclear Energy Drops, a Wisconsin Plant Is Shut.” *New York Times*. May 7, 2013. [http://www.nytimes.com/2013/05/08/business/energy-environment/kewaunee-nuclear-power-plant-shuts-down.html?\\_r=0](http://www.nytimes.com/2013/05/08/business/energy-environment/kewaunee-nuclear-power-plant-shuts-down.html?_r=0)

after announcing its intention to close the plant<sup>16</sup> for the same reasons Entergy is closing Vermont Yankee. The Sacramento Municipal Utility District shut down the Rancho Seco reactor immediately, just one day after voters approved a ballot measure to permanently cease operations.<sup>17</sup> Public Service Company of Colorado initially intended to continue operating the Fort St. Vrain reactor another eighteen (18) months<sup>18</sup> after announcing closure plans, but was forced to retire it after only nine months due to continuing safety problems.<sup>19</sup>

The eventuality of a licensee continuing to operate a financially distressed reactor for such an extended period of time after a closure announcement poses unprecedented threats to the public health and safety and must not be permitted. Entergy's decision is most likely based on its short-term financial interests rather than operational logistics. Operating the plant through (and potentially beyond) the original fueling cycle allows the company to maximize the depreciation of its capital investment in nuclear fuel, and thereby reduce the cash flow deficit on its financial statements. This decision plainly puts profits and investor confidence ahead of the public and worker health and safety, despite the inherent danger in operating a reactor the licensee now has no long-term interest in maintaining. .

Not only does the decision put plant managers and staff in the untenable situation of continuing to operate a reactor for an extended period of time in which the parent company will not invest in maintenance; Entergy will face increasing difficulties in retaining experienced and qualified personnel to ensure safe operation of the plant as Vermont Yankee employees seek out long-term employment opportunities.

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<sup>16</sup> Dominion Corp. "Dominion To Close, Decommission Kewaunee Power Station." Media Release. October 22, 2012. <http://dom.mediaroom.com/2012-10-22-Dominion-To-Close-Decommission-Kewaunee-Power-Station>

<sup>17</sup> Wald, Matthew. "Voters, in a First, Shut Down Nuclear Reactor." *New York Times*. June 8, 1989. <http://www.nytimes.com/1989/06/08/us/voters-in-a-first-shut-down-nuclear-reactor.html>

<sup>18</sup> Searles, Denis M. "Utility to End Nuclear Operations at Fort St. Vrain Power Plant." *Associated Press*. December 5, 1988. <http://www.apnewsarchive.com/1988/Utility-to-End-Nuclear-Operations-at-Fort-St-Vrain-Power-Plant/id-2a5996d731bf983aef0bfb7200b5ebb5>

<sup>19</sup> Kindelspire, Tony. "Colorado nuke plant at Fort St. Vrain had short, troubled ride." *Longmont Weekly*. March 28, 2011. [http://www.longmontweekly.com/ci\\_17701792](http://www.longmontweekly.com/ci_17701792)

### **3. NRC Must Investigate the Impact of Entergy's Financial Qualifications Problems and Actions on the Workforce and the Safety-Conscious Work Environment**

NRC must also take enforcement action to prevent cross-cutting safety impacts on workforce morale and the safety-conscious work environment, including but not limited to the development of a chilled work atmosphere that would discourage employees from reporting and pursuing safety concerns. Prior to the VY closure announcement, the financial conditions of the three reactors were well-known enough to create public uncertainty regarding the future operations of the plants, regardless of Entergy's reassuring public statements. Entergy's assurances that it planned to continue operating the reactor might have buoyed morale, just as it boosted confidence among the general public about the reactor's financial condition. The succession of company-wide layoffs announced in late July and Entergy's abrupt change of position in closing VY creates a qualitatively different environment in which workers and the public may no longer be able to trust Entergy's statements.

Recent developments have amplified the uncertainty facing employees at FitzPatrick and Pilgrim and compromised Entergy's credibility even further. Given public knowledge of the plants' uncertain circumstances and Entergy's inconsistent and increasingly non-committal statements regarding the future of FitzPatrick and Pilgrim, workers may rightly feel that reporting problems that would induce or extend outages or power reductions and/or incur capital costs could directly influence Entergy's decision to continue operating the reactors. The real or perceived threat to employees' job security and that of their coworkers does not necessarily require explicit management actions or directives to have this effect; the fact that Entergy has just decided to close a reactor that is insufficiently productive, and that FitzPatrick and Pilgrim are known to be in similar situations, is enough to lead any reasonable person to suspect that further productivity declines or cost increases could lead Entergy to retire one or both of the other reactors. Under these circumstances, the kind of communications routinely issued by management

encouraging workers to report problems may not be sufficient to convince employees that it is safe for them to do so.

Entergy's decision to continue operating Vermont Yankee for potentially another fourteen months poses similar, and in some ways more complicated, threats to workforce-related areas of nuclear safety. The certainty of plant closure and Entergy's statement that it intends to mothball the plant for up to 60 years under NRC's SAFSTOR decommissioning regulations guarantees VY employees virtually no long-term job security, thereby placing them in a position to begin looking for new employment. The safety-conscious work environment may be compromised due to Energy's decision not to invest in future operation of the plant and an implicit desire to minimize costs and outage time for the next 14 months. Furthermore, plant staff may be further disinclined to build a reputation as whistleblowers, whether because they would like to avoid being laid off or they are seeking employment elsewhere.

This condition is compounded by the potential for Entergy to lose a significant portion of the skilled workforce prior to final shutdown. This latter condition would most likely be felt among the most qualified of VY employees and those in critical divisions and skill certifications, as they are the most likely to find quality longer-term employment opportunities. Had Entergy decided to operate VY for a much shorter amount of time following the closure announcement, as Dominion did at Kewaunee, these problems would not be as much of a concern. Thus, Entergy's violation of financial qualifications requirements are no less relevant at VY, and must be counted as a root-cause contributor to the kind of violations of plant staffing and safety-conscious work environment requirements that may reasonably be anticipated.

For these reasons, we request that NRC initiate an investigation into the safety-conscious work environments, employment patterns, and staffing levels at FitzPatrick, Pilgrim, and VY. Among the indicator data NRC should include in its reviews are the number of employees at each reactor, employee retention, skill and experience levels of the workforce, and changes in management at FitzPatrick and Pilgrim. Plant employees may

perceive management changes as a precursor to a plant closure announcement, because it could appear that either Entergy is shifting into a decommissioning mode or that managers have inside knowledge and are leaving proactively. Because of the circumstances at these reactors, NRC must conduct an active investigation, including appropriately targeted and confidential interviews with Entergy employees and worker representatives, rather than rely on Entergy management to report to NRC on what it is doing to address these concerns.

#### **4. NRC’s Investigations Must Include a Detailed Audit of Anticipated Capital Expenses and Safety Upgrades**

As part of its investigation, NRC must include an audit of planned capital expenses at each of the reactors, including both site-specific items (e.g., condenser replacement at FitzPatrick) and those responding to regulatory requirements (e.g., compliance with NRC Order EA-12-050, “Order Modifying Licenses with Regard to Reliable Hardened Containment Vents”)<sup>20</sup> and industry programs (e.g., and implementation of NEI-12-06, “Diverse and Flexible Coping Strategies (FLEX)”<sup>21</sup>). This is necessary to produce an accurate fiscal analysis of each plant in order to determine financial qualifications. Additionally, it is necessary in order to ensure that the operators of each plant are complying with quality assurance regulations, NRC orders and other legal obligations to maintain the equipment in working order and perform required safety upgrades.

The audit must also include financing expenses and amortization schedules for each capital expense, as well as projected outages, power reductions, and revenue impacts associated with each capital project. That data will enable NRC to generate accurate free cash flow projections and analyze their sensitivity to market conditions and changing operational performance in evaluating Entergy’s financial qualifications. Furthermore, this information will enable NRC to evaluate Entergy’s capital investment decisions –

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<sup>20</sup> U.S. Nuclear Regulatory Commission. “JLD-ISG-2012-02: Compliance with Order EA-12-050, Reliable Hardened Containment Vents.” May 29, 2012.

<http://pbadupws.nrc.gov/docs/ML1214/ML12146A371.pdf>

<sup>21</sup> Nuclear Energy Institute. “NEI 12-06: Diverse And Flexible Coping Strategies (FLEX) Implementation Guide.” August, 2012. <http://pbadupws.nrc.gov/docs/ML1222/ML12221A205.pdf>

and emerging equipment reliability needs and fiscal obligations – with respect to the licensees’ financial qualifications.

The evolving situation at Pilgrim in 2013 is an important case in point: using UBS’s model for generating free cash flow projections, Pilgrim’s estimated losses would have been substantial (~\$18 million). The unanticipated outage time and power reductions this year would increase that number by more than 150%, based on revenue losses alone. However, Entergy may also be incurring additional capital expenditures in order to replace and repair equipment. The financing costs and amortization schedules for these investments would be born in subsequent years and may affect Pilgrim’s financial projections on a going forward basis, raising annual costs above and beyond what is included in estimates based on UBS’s model.

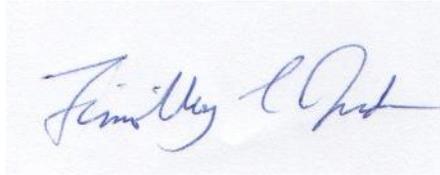
### **Conclusion**

For the above-stated reasons, and in light of the information provided herein, petitioners request that NRC expand investigations into Entergy’s financial qualifications at FitzPatrick, Pilgrim, and Vermont Yankee to include within the evolving conditions affecting the operations of the reactors via the following:

1. Undertaking an investigation into the safety-conscious work environment and the quality assurance and quality control programs (hereafter, “QAQC”) at each of the subject plants, namely Vermont Yankee, FitzPatrick, and Pilgrim.
2. Including a detailed audit of planned and anticipated capital expenditures at each of the reactors, as well as a cost and amortization schedule for each capital project.

We further reiterate our request that the financial qualifications regulations be meaningfully enforced at these reactors. In light of the financial stress at these reactors and Entergy's hesitancy to take immediate action to shut its plants that are not profitable, we urge the NRC to take enforcement action as necessary to protect public health and safety.

Jointly signed on behalf of the petitioners:



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## Appendix 1: 2013 Event Reports and Equipment Problems at Pilgrim Nuclear Power Station

- 1) 01/10/13 Event 48664<sup>22</sup>  
SCRAM. Both recirculation pumps tripped.
- 2) 01/12/13 Event 48669<sup>23</sup>  
Potential Security Threat reported.
- 3) 01/14/13<sup>24</sup>  
Bottom head drain valve leak
- 4) 01/21/13 Event 48685<sup>25</sup>  
Safety Relief Valve Leak.
- 5) 02/08/13 Event 48736<sup>26</sup>  
Unusual Event declared. SCRAM. Loss of Offsite Power (LOOP).
- 6) 03/03/13 Event 48801<sup>27</sup>  
Scram Discharge Volume Valve declared inoperable.
- 7) 04/15/13 Event 48923<sup>28</sup>  
SCRAM. A manual reactor scram was inserted due to reactor pressure lowering beyond established control bands, while conducting a planned reactor shutdown.
- 8) 04/15/13 Event 48924<sup>29</sup>  
Primary Containment Air Lock Failed Integrated Leak Rate Test.
- 9) 05/19/13 Event 49053<sup>30</sup>  
Fire in Turbine Building Lubricating Oil Room.
10. 05/23/13 Event 49061<sup>31</sup>  
Primary containment declared inoperable during HPCI testing.

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<sup>22</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130111en.html#en48664>

<sup>23</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130114en.html#en48669>

<sup>24</sup> Mand, Frank. "PILGRIM STATION: Chronology of 2013 leaks, events." *WickedLocalPlymouth.com*. April 20, 2013. <http://www.wickedlocal.com/plymouth/news/x1641167559/PILGRIM-STATION-Chronology-of-2013-leaks-events>

<sup>25</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130122en.html#en48685>

<sup>26</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130211en.html#en48736>

<sup>27</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130304en.html#en48801>

<sup>28</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130416en.html#en48923>

<sup>29</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130416en.html#en48924>

<sup>30</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130521en.html#en49053>

<sup>31</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130524en.html#en49061>

11. 05/23/13 Event 49064<sup>32</sup>  
HPCI declared inoperable during post-maintenance testing.
12. 07/11/13 Event 49187<sup>33</sup>  
Fitness for duty. Supervisor tested positive for banned substance.
13. 07/15/13 Event 49189<sup>34</sup>  
Unusual Event declared. Loss control room annunciators.
14. 07/16/13 Event 49196<sup>35</sup>  
Salt Service Water system declared inoperable and due to high water temperatures.
15. 08/22/13 Event 49296<sup>36</sup>  
SCRAM. Breakers tripped to all three feedwater pumps.
16. 09/03/13  
Feedwater Pump Motor inoperable. Spare pump requires maintenance. Operated at reduced power from 08/31-09/08/13.<sup>37</sup>
17. 09/08/13<sup>38</sup>  
Shutdown. Steam leak in feedwater system.

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<sup>32</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130524en.html#en49064>

<sup>33</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130712en.html#en49187>

<sup>34</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130716en.html#en49189>

<sup>35</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130717en.html#en49196>

<sup>36</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/event/2013/20130823en.html#en49296>

<sup>37</sup> <http://www.nrc.gov/reading-rm/doc-collections/event-status/reactor-status/2013/20130831ps.html>

<sup>38</sup> Lambert, Lane. "Steam leak forces Pilgrim nuclear plant offline again." *Patriot-Ledger*. September 9, 2013.

<http://www.patriotledger.com/topstories/x1281954414/Steam-leak-forces-Pilgrim-nuclear-plant-offline-again>