

STATE OF VERMONT
PUBLIC SERVICE BOARD

Joint Petition of NorthStar Decommissioning)
Holdings, LLC, NorthStar Nuclear)
Decommissioning Company, LLC, NorthStar)
Group Services, Inc., LVI Parent Corp., NorthStar) Docket No. []
Group Holdings, LLC, Entergy Nuclear Vermont)
Investment Company, LLC, and Entergy Nuclear)
Operations, Inc., and any other necessary)
affiliated entities to transfer ownership of Entergy)
Nuclear Vermont Yankee, LLC and for certain)
ancillary approvals, pursuant to 30 V.S.A. §§ 107,)
231, and 232)

SUMMARY OF INITIAL PREFILED TESTIMONY OF SUSAN TIERNEY

Ms. Tierney's testimony addresses the consistency of the transaction that is the subject of the Joint Petition with many of Vermont's energy policies and goals as well as community values and orderly development objectives to provide a framework for the Board's consideration of these issues as it weighs whether the transaction promotes the public good.

Ms. Tierney sponsors the following exhibits:

JP-SFT-1	Resume of Susan F. Tierney
JP-SFT-2	Disc containing referenced documents

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PREFILED TESTIMONY AND EXHIBITS OF SUSAN TIERNEY

1 Q1. **Please state your full name and business address.**

2 A1. My name is Susan F. Tierney. I am employed at Analysis Group, where until recently I
3 worked at the company's headquarters in Boston, Massachusetts. I moved to Colorado in
4 the Spring of 2016, and now work out of Analysis Group's Denver office.

5 Q2. **What is your position?**

6 A2. I am one of Analysis Group's Senior Advisors.

7 Q3. **What are your duties as a senior advisor at Analysis Group?**

8 A3. I am a lead consultant for many of our engagements with businesses, government
9 agencies, non-governmental organizations, and other clients on matters relating to the
10 electric and natural gas industries. For these projects, I supervise and work with teams of
11 consultants with training in economics, business and finance, public policy and planning,
12 regional planning, math, and other fields.

13

1 Q4. **Please summarize your educational background and training.**

2 A4. I hold a Ph.D. in regional planning (1980) and a Masters in Regional Planning (1976),
3 both from Cornell University. I was an assistant professor for 3.5 years at the University
4 of California at Irvine, and taught on a part-time basis at the Massachusetts Institute of
5 Technology (“MIT”). I have lectured at Harvard University, Yale University, MIT,
6 Cornell University, New York University, Tufts University, the University of
7 Pennsylvania, the University of Michigan, and other institutions.

8 Q5. **Please describe your professional experience.**

9 A5. Over my professional career, I have been involved in issues related to public utilities’
10 ratemaking and regulation, electricity markets, energy and environmental economics and
11 policy, the environmental impacts of energy developments, and regional economic
12 development and planning. During this period, I have worked on these issues as a utility
13 regulator, energy/environmental analyst, policy maker, educator, consultant, and expert
14 witness. For more than 15 years, I have been a consultant and advisor on a variety of
15 economic, environmental and policy issues in the energy sector.

16 Before that, I served in senior state and federal policy and regulatory positions for 13
17 years. I was the Assistant Secretary for Policy at the U.S. Department of Energy
18 (“DOE”) (1993-1995). I held senior positions in the Massachusetts state government as
19 Secretary of Environmental Affairs (1991-1993), Commissioner of the Department of
20 Public Utilities (1988-1991), and Executive Director of the Energy Facilities Siting
21 Council (during the mid-1980s).

1 I currently sit on several non-profit boards, advisory boards and commissions, including
2 as chair of the DOE's Electricity Advisory Council, chair of the External Advisory Board
3 of the National Renewable Energy Laboratory ("NREL"), chair of the Board of the
4 ClimateWorks Foundation, and a director of World Resources Institute, Resources for the
5 Future, the Alliance to Save Energy, the Energy Foundation, and the Keystone Center. I
6 serve on the National Academy of Sciences' ("NAS") committee on resiliency and the
7 electric grid, and on the environmental advisory council of the New York Independent
8 System Operator ("NYISO"). I recently co-chaired the Gas-Electric Harmonization
9 Committee of the North American Energy Standards Board ("NAESB"), was a member
10 of the NAS panel on shale gas risk, was co-lead author of the energy chapter of the
11 National Climate Assessment, served as the U.S. representative to the international panel
12 assessing the initiatives of the 23-nation Clean Energy Ministerial, was a member of the
13 U.S. Secretary of Energy Advisory Board (and its Shale Gas Subcommittee), and served
14 on the National Petroleum Council ("NPC"). I was a director of several companies
15 (including EnerNOC, Inc.; Evergreen Solar; and Ze-gen, Inc); and served on the boards
16 of several other non-governmental organizations. On several occasions, I have served on
17 technical review panels conducting peer reviews of various divisions of DOE's national
18 labs, including NREL's and the Energy Division of the Lawrence Berkeley National
19 Laboratory. I chaired the Policy Subgroup of the NPC's study of the North American
20 natural gas and oil resource base; chaired the Massachusetts Ocean Advisory
21 Commission; co-chaired the National Commission on Energy Policy; served as a director
22 of the Electric Power Research Institute ("EPRI"); chaired the Electricity Innovation

1 Institute’s Board of Directors; was a representative to committees of the North American
2 Electric Reliability Corporation (“NERC”); served on the NAS Committee on Enhancing
3 the Robustness and Resilience of Electrical Transmission and Distribution in the United
4 States to Terrorist Attack; and was a member of the U.S. Secretary of Energy’s Electric
5 Reliability Task Force. My complete curriculum vitae is attached as Exhibit JP-SFT-1.

6 **Q6. Have you previously submitted testimony before state or federal bodies?**

7 A6. Yes. I have testified before utility regulatory agencies in many states, state energy facility
8 siting agencies, the Federal Energy Regulatory Commission, the U.S. Congress, several
9 state legislatures, arbitration panels, and federal and state courts. I have not previously
10 testified before the Vermont Public Service Board (“Board”).

11 **Q7. On whose behalf are you testifying in this proceeding?**

12 A7. I am testifying on behalf of the Petitioners, with the NorthStar entities individually
13 referred to herein as “NorthStar” and the Entergy entities referred to herein as “Entergy,”
14 except where a specific reference to a Petitioner company is required.

15 **Q8. What is the purpose of your testimony?**

16 A8. As an expert in utility regulation and the administration of energy, environmental and
17 land-use policies, I have been asked by the Petitioners to comment on regulatory and
18 other public-interest issues raised by the Petitioners’ filing. A central outcome
19 anticipated by the Petitioners’ Proposed Transaction¹ is the commitment by NorthStar to

¹ In my testimony, the phrase- “the Proposed Transaction” refers to the Joint Petition’s proposal to transfer ownership of Entergy Nuclear Vermont Yankee, LLC, from Entergy to NorthStar, combined with all of the commitments set forth in the Proposed Transaction between NorthStar and Entergy.

1 accelerate the decommissioning and site restoration schedule for the Vermont Yankee
2 Nuclear Power Station (“Vermont Yankee or VY Station”). Whereas Entergy’s current
3 schedule² anticipates commencing decontamination and dismantlement in approximately
4 2053, with projected completion of both decommissioning and site restoration by 2060,
5 the Proposed Transaction includes NorthStar’s commitments to initiate decontamination
6 and dismantlement by 2021 and to complete decommissioning and restoration of the
7 Vermont Yankee site (with the exception of the ISFSI³) by 2030.⁴
8 My testimony addresses the Proposed Transaction’s consistency with many of Vermont’s
9 energy policies and goals. The Proposed Transaction includes a variety of legal, financial
10 and other elements which will affect the timing of actions relating to the
11 decommissioning of the Vermont Yankee site as well as the character of their economic
12 and environmental impacts in Vermont. The Petitioners’ filing is supported by a variety
13 of subject-matter experts and company representatives who provide technical information

² I am aware that the Vermont Yankee Nuclear Power Station Post Shutdown Decommissioning Activities Report, December 2, 2014 (“VY PSDAR”), available at <http://pbadupws.nrc.gov/docs/ML1435/ML14357A110.pdf>, and filed by Entergy calls for decontamination and dismantlement of the facility starting in the year 2068, with completion of decommissioning and site restoration by 2075. The Petitioners’ filing sets forth a possibly earlier and more conservative decommissioning period – from the perspective of the review of the proposed transaction – than the maximum period allowed by the Nuclear Regulatory Commission (“NRC”) for the “SAFSTOR” method of decommissioning, as described further below. Even this earlier estimate is three decades later than NorthStar’s commitments under the Proposed Transaction.

³ “ISFSI” stands for Interim Spent Fuel Storage Installation (i.e., the on-site spent-fuel storage facility).

⁴ Entergy Press Release, November 8, 2016. Under the new proposed schedule, NorthStar will continue to operate and maintain the **ISFSI** at Vermont Yankee “until the US Department of Energy fulfills its statutory and contractual obligations to remove all of the spent nuclear fuel from Vermont Yankee. NorthStar will then decommission the ISFSI, terminate the NRC license and complete site restoration.” <http://www.entergynewsroom.com/latest-news/vermont-yankeedecommissioning-accelerated-by-decades/>.

1 on these legal, financial, environmental, economic, and other topics;⁵ my objective is to
2 provide a framework for the Board's consideration of these issues as it weighs whether
3 the Proposed Transaction promotes the public good.

4 **Q9. Please summarize the conclusions you reach in your testimony.**

5 **A9.** My most important conclusions are as follows, and are explained in greater detail in my
6 testimony below:

- 7 1. Although this is in many ways a case of first impression – in that it
8 pertains to a proposed transaction between an energy company that owns a
9 retired nuclear power plant in the State of Vermont, on the one hand, and a
10 non-energy company in the business of providing decommissioning and
11 remediation services to entities in the power industry and in other
12 industrial and governmental sectors, on the other – there is significant,
13 relevant regulatory policy and precedent for the Board's review of the
14 Proposed Transaction.
- 15 2. After reviewing Board decisions and orders relating to public-good
16 determinations, I recommend that the Board focus its review particularly
17 on – and give substantial weight to – the following factors:

⁵ These witnesses are as follows: Scott State (Chief Executive Officer of NorthStar Group Services, Inc.); Jeffrey Adix (Chief Financial Officer of NorthStar Group Services, Inc.); Steven Scheurich (Vice President, Nuclear Decommissioning, Entergy Wholesale Commodities); T. Michael Twomey (Vice President, External Affairs, Entergy Wholesale Commodities); Todd Smith (President of TSSD Services, Inc.); Dr. Mark Berkman (Principal, The Brattle Group); and Harry Dodson (Founding Partner of Dodson & Flinker, Inc. landscape architects).

- 1 a. Factors relating to the acquiring company in the Proposed
2 Transaction:
- 3 i. technical competence,
 - 4 ii. financial strength, and
 - 5 iii. reputation and conduct, such that the company can be
6 expected to comply with regulatory commitments and act
7 as a fair partner in business transactions with the citizens of
8 Vermont.
- 9 b. Factors relating to the activities anticipated as a result of the
10 Proposed Transaction, as compared to the status quo in the absence
11 of it:
- 12 i. alignment with Vermont's energy goals,
 - 13 ii. alignment with community values,
 - 14 iii. economic impacts on employment and the local economy
15 and contribution to orderly development of Vermont's
16 economy, and
 - 17 iv. impacts on the environment, aesthetics, and inter-
18 generational equity, and on non-radiological public safety
19 aspects of decommissioning and site restoration.
- 20 3. Even though this is not an energy proposal *per se* because nuclear
21 generation has ceased, the Vermont Yankee site has been a part of

1 Vermont's energy picture for more than 40 years, and there are elements
2 of the Proposed Transaction that, in my opinion, have the potential to align
3 positively with Vermont's energy and climate-change policies and goals
4 and, at a minimum, do not conflict with those goals.

- 5 4. Non-energy aspects of the Petitioners' plan are also, in my opinion,
6 relevant to the Board's decision on whether the Proposed Transaction is in
7 the public good. Many of the specific details of these issues are addressed
8 in the testimony of other subject matter experts in this proceeding. They
9 point out advantages of the Proposed Transaction relative to the status quo
10 (i.e., what might be expected to occur on portions of the Vermont Yankee
11 site in the future in the absence of the Proposed Transaction), in terms of
12 the much-earlier restoration of the non-ISFSI portions of the site that will
13 result from the Proposed Transaction. Their testimony supports factors
14 relevant to the Board's public good determination and will provide the
15 Board with information that will enable it to determine the Proposed
16 Transaction's alignment with community values; the degree of positive
17 impacts on Vermont's economy and economic development; and
18 consistency with land-use goals of the State and communities near the
19 Vermont Yankee site. Additionally, there are many relatively recent
20 studies and local stakeholder statements that support an earlier
21 decommissioning schedule for a variety of economic, aesthetic and other

1 reasons. These provide evidence that public policy and community values
2 support a finding that earlier decommissioning is in the public good.

3 **5.** As the Board determines whether this Proposed Transaction promotes the
4 general good of the state, I encourage the Board to give considerable
5 weight to these issues: alignment with Vermont’s energy goals, alignment
6 with community values, economic impacts on employment and the local
7 economy and contribution to orderly development of Vermont’s economy,
8 and impacts on the environment, aesthetics and inter-generational equity.

9 **Q10. How is your testimony organized?**

10 **A10.** After Section I (where I presented my qualifications) and this Section II (in which I
11 describe the purpose, conclusions, and structure of my testimony), I briefly describe in
12 Section III the context in which this Joint Petition comes before the Board. That context
13 includes: the status of Vermont Yankee’s current retirement and decommissioning plan;
14 the findings of various studies and assessments regarding the impacts of Vermont
15 Yankee’s retirement; and the activities of various stakeholder groups to understand and
16 assess the impacts of Vermont Yankee’s retirement and decommissioning process. In
17 Section IV, I discuss the Board’s recent orders on matters related to Vermont Yankee and
18 elements of its standard of review that are relevant to the Proposed Transaction under the
19 public good standard. In Section V, I address specific energy-related issues that are
20 affected by the Proposed Transaction, including its consistency with current Vermont
21 energy and climate plans. In Section VI, I point to other non-energy issues that the

1 Board should take into consideration when determining whether the Proposed
2 Transaction satisfies the public good standard. My conclusions are in Section VII.

3 **Q11. Please describe your understanding of the status of Vermont Yankee, from an**
4 **operational and regulatory point of view.**

5 A11. In August of 2013, Entergy announced its intention to cease power generation in the
6 fourth quarter of 2014.⁶ In March of 2014, the Board issued an order⁷ authorizing
7 Entergy to continue to own and operate Vermont Yankee up until December 31, 2014
8 and thereafter to decommission the plant, subject to a Memorandum of Understanding
9 ("MOU") among Entergy, the Vermont Department of Public Service ("Department") and
10 Vermont's Agency of Natural Resources ("ANR"), and a Settlement Agreement among
11 Entergy, the Department, the ANR, the Vermont Department of Public Health ("VDH")
12 and the Vermont Office of the Attorney General ("Settlement Agreement"), that together
13 set forth various commitments related to operations of Vermont Yankee, Entergy's
14 funding to support various activities in Vermont, and Entergy's efforts to pursue
15 radiological decommissioning review processes at the Nuclear Regulatory Commission

⁶ Entergy Press Release, August 27, 2013.

⁷ Docket 7862, *Am. Pet. of Entergy VY for amendment of their CPG and other approvals required under 30 V.S.A. § 231(a) for authority to continue after March 21, 2012, operation of the VY Station, including the storage of SNF*, Order of 3/28/2014 ("Docket 7862, Board Order of 3/28/14"). Also, the Board has found that "[n]on-radiological site restoration standards...remain within our jurisdiction and the determination on the adequacy of funds for site restoration has not been delegated." Docket 7862, *Am. Pet. of Entergy VY for amendment of their CPG and other approvals required under 30 V.S.A. § 231(a) for authority to continue after March 21, 2012, operation of the VY Station, including the storage of SNF*, Order of 5/1/2014 at 9.

1 (“NRC”) and eventual restoration of the Vermont Yankee site.⁸ Among other things, the
2 Settlement Agreement supports a timely decommissioning schedule and process:⁹ to
3 begin radiological decommissioning (under the jurisdiction of the NRC) within 120 days
4 after Entergy has reasonably determined the adequacy of funds in the Vermont Yankee
5 Nuclear Decommissioning Trust to complete decommissioning; to promptly commence,
6 pursue and complete as soon as reasonably possible radiological decontamination and
7 dismantlement activities; to commence site restoration in accordance with agreed
8 standards promptly after completing radiological decommissioning; and to seek from
9 NRC the release of portions of the site for reuse as appropriate.¹⁰
10

⁸ Memorandum of Understanding Among Entergy Nuclear Vermont Yankee, LLC, Entergy Nuclear Operations, Inc., Vermont Public Service Department, and Vermont Agency of Natural Resources, December 23, 2013 (“VY MOU”), attached and incorporated into the Board’s 3/28/14 Order; Settlement Agreement, December 23, 2013 (“Settlement Agreement”), which is an attachment to the VY PSDAR.

⁹ The Settlement Agreement states on page 2 that two of the principles that should guide post-operation matters at the Vermont Yankee site are that: “to facilitate the prompt economic redevelopment of the VY Station site, the decommissioning process should occur without unreasonable delay, as soon as there are sufficient funds in the Nuclear Decommissioning Trust (“NDT”) for the VY Station;” and “it is in the best interests of the State for the VY Station site to be available for prompt economic redevelopment through the expeditious progress and completion of decommissioning and, as provided for in prior agreements, site restoration.” The Settlement Agreement states further, on page 4, that “Entergy VY shall make appropriate filings with the NRC to obtain authority to begin radiological decommissioning within one hundred twenty (120) days after it has made a reasonable determination that the funds in the NDT are adequate to complete decommissioning and remaining SNF management activities that the federal government has not yet agreed (or been ordered) to reimburse. Once Entergy VY receives either NRC approval of, or non-opposition to, its filings, Entergy VY shall promptly commence, pursue, and complete as soon as reasonably possible radiological decontamination and dismantling activities.”

¹⁰ See VY PSDAR at 2-3 describing these “key commitments in the Settlement Agreement relevant to decommissioning, including site restoration after radiological decommissioning has been completed.”

1 Vermont Yankee permanently ceased operations on December 29, 2014,¹¹ and Entergy
2 filed the VY PSDAR at the NRC, in which it set forth the company's overall plan for
3 decommissioning the site.¹² As described in the testimony of Mr. Scheurich in this
4 proceeding, Entergy's plan in the absence of the Proposed Transaction has been to
5 decommission the site according to the SAFSTOR method,¹³ with a schedule that would
6 likely lead to having the site restored for potential reuse by the year 2075, with a
7 potentially earlier decommissioning process that could move this date to approximately
8 2060 as described by Mr. Scheurich.¹⁴

9 As a point of reference in my own testimony, I provide the following overview figures
10 (from Entergy's VY PSDAR) which depict the baseline schedule for SAFSTOR
11 decommissioning (in Figure SFT-1¹⁵), along with the staffing levels associated with that
12 baseline schedule (in Figure SFT-2¹⁶). These figures depict the maximum period of
13 decommissioning originally proposed by Entergy in the VY PSDAR; these periods are
14 directionally similar to the possibly earlier dates referenced in Mr. Scheurich's testimony
15 (compared to NorthStar's proposal). I refer to these as 'baseline schedule' and 'baseline

¹¹ Letter from Christopher J. Wamser, Site Vice President, Energy Nuclear Operations, Inc., to U.S. Nuclear Regulatory Commission, January 12, 2015: "ENO hereby certifies to the NRC that a determination to permanently cease power operations at VYNPS was made on December 29, 2014, which was the date on which power operations ceased at VYNPS. Pursuant to 10 CFR 50.82(a)(1)(ii), ENO also certifies that the fuel has been permanently removed from the VYNPS reactor vessel and placed in the spent fuel pool."

¹² VY PSDAR.

¹³ See Scheurich Testimony at 13-14.

¹⁴ See Scheurich Testimony at 15-16, VY PSDAR.

¹⁵ VY PSDAR, Figure 4.2.

¹⁶ VY PSDAR, Figure 3.1.

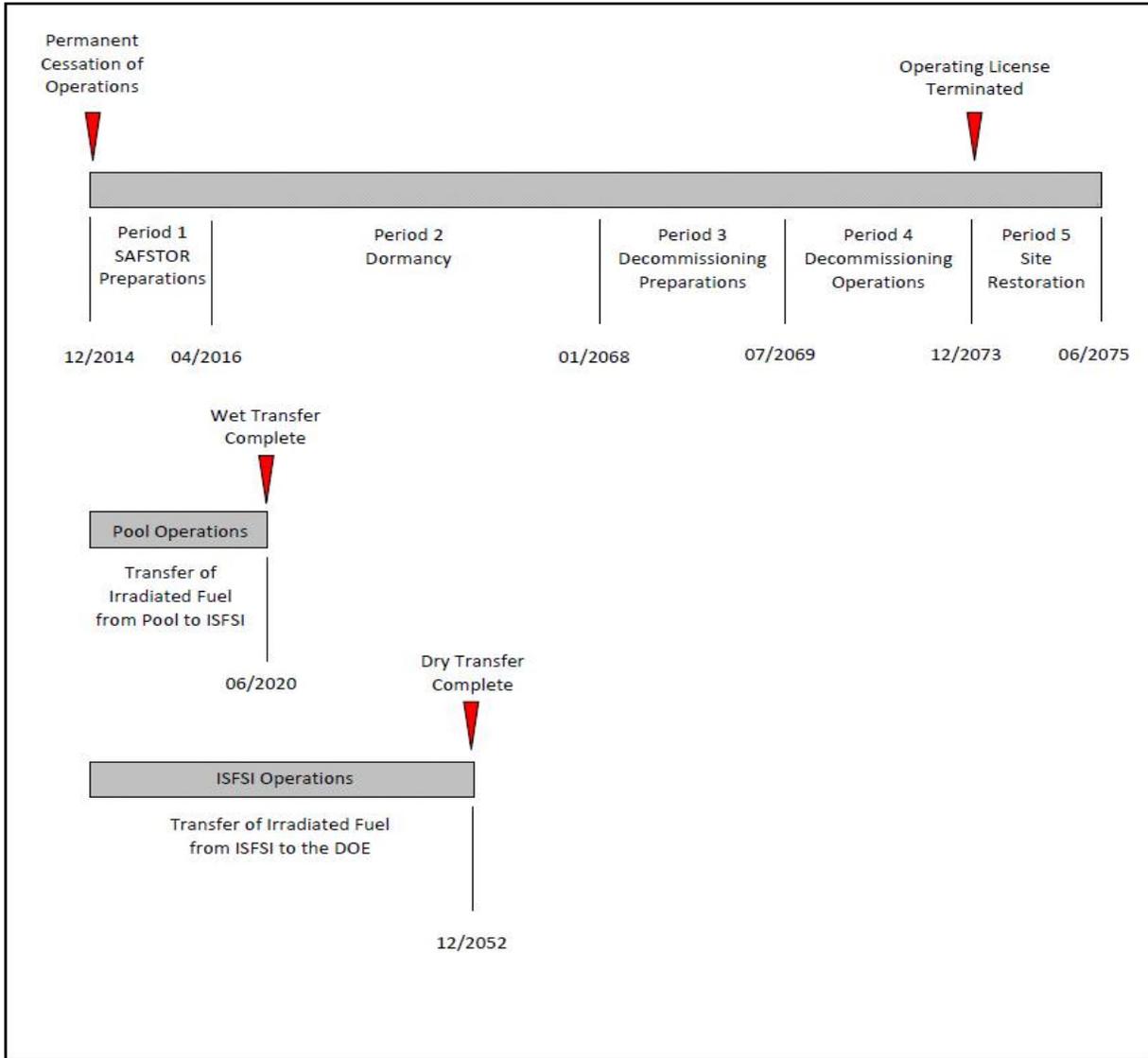
1 staffing' because these reflect Entergy's decommissioning plan in the absence of the
2 Proposed Transaction.

3 **Q12. How would the Proposed Transaction and its commitments affect this schedule?**

4 A12. As described in the testimony of Mr. State, the proposal before the Commission would
5 lead to decommissioning and site restoration decades ahead of the current Entergy plan,
6 with much of the Vermont Yankee site (essentially, all but the ISFSI area) expected to be
7 available for reuse by 2030.¹⁷

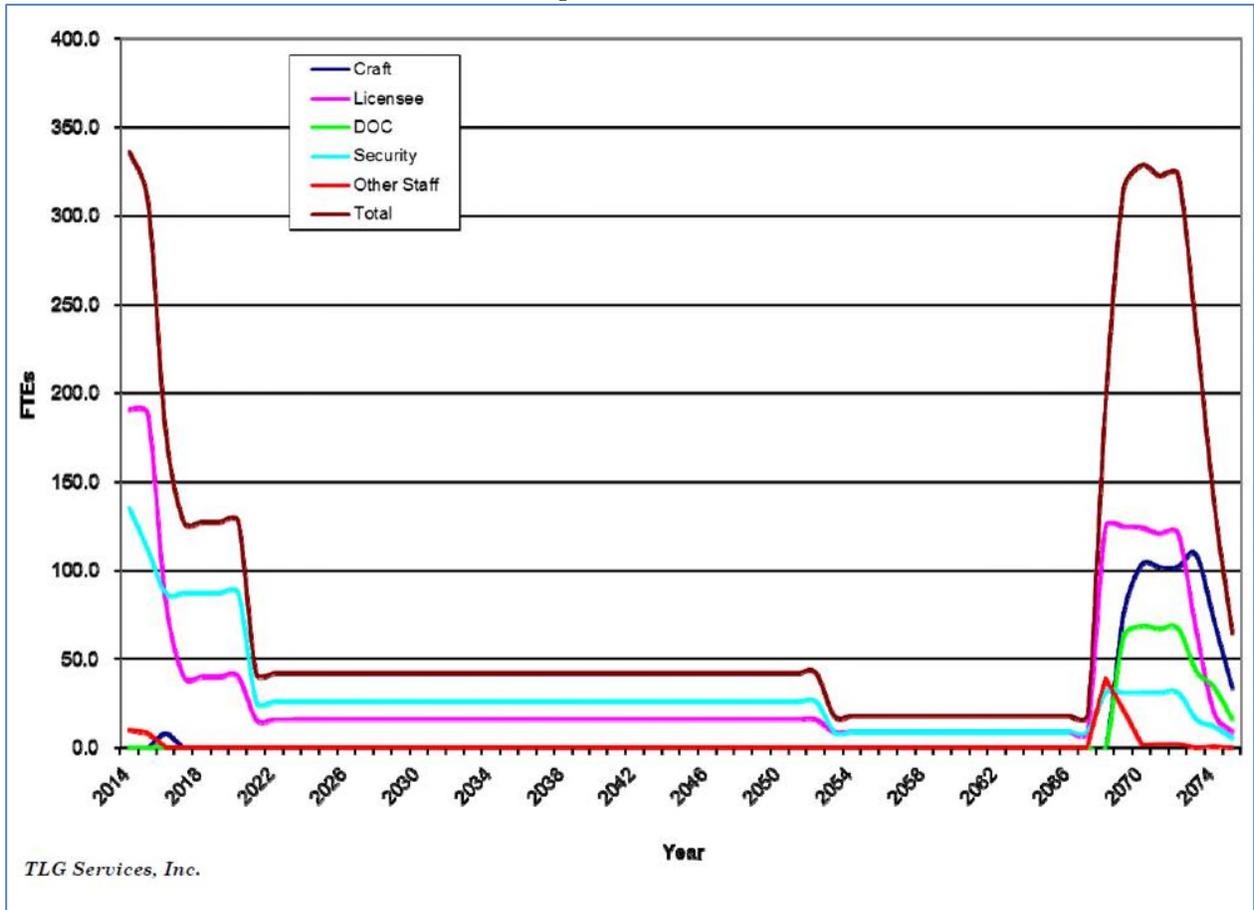
¹⁷ State Testimony at 20-21.

**Figure SFT-1:
 Vermont Yankee Baseline Decommissioning Schedule
 2014-2075 (not to scale)**



Source: VY PSDAR, Figure 4.2. (Note that the schedule shown in this figure depicts the maximum decommissioning schedule in the filed VY PSDAR, not the potentially shorter schedule as described in the testimony of Mr. Scheurich.)

Figure SFT-2
Vermont Yankee Baseline Site Staffing Levels During Decommissioning
(Full-Time Equivalent Positions, 2014-2075)



Source: VY PSDAR, Figure 3.1 (Note that the schedule shown in this figure depicts the maximum decommissioning schedule in the filed VY PSDAR, not the potentially shorter schedule as described in the testimony of Mr. Scheurich.)

1 Q13. Are you aware of studies and analyses that have been performed to examine
2 potential impacts on Vermont's economy of Entergy's original plan for
3 decommissioning of the Vermont Yankee site?

4 A13. Yes. I am aware of several relatively recent studies about the implications for Vermont's
5 workforce and economy of continued operations at Vermont Yankee versus near-term

1 retirement. One of these studies is the 2008 benefit/cost study prepared by GDS
2 Associates, which examined (among other things) the economic impacts of continued
3 operations at Vermont Yankee versus plant retirement in 2013, with job losses associated
4 with a near-term retirement “offset somewhat” by decommissioning activities, but those
5 offsets varying according to the timing of the decommissioning date.¹⁸ Another study was
6 prepared in 2012 by Northern Economic Consulting,¹⁹ and examined the employment
7 impacts on Windham County (where Vermont Yankee is located) and Vermont of three
8 scenarios for Vermont Yankee’s decommissioning: a retirement in 2013, with
9 SAFSTOR thereafter;²⁰ a 2032 retirement with prompt decommissioning thereafter;²¹ and

¹⁸ This benefit/cost analysis was performed as part of the DPS Act 160 Study, Chapter 11 Economics Report, available at <http://www.leg.state.vt.us/jfo/envy/7440%20Economic%20Cost%20Benefit%20Analysis.pdf>. See also Testimony of George R. Nagle on behalf of Vermont Department of Public Service, V Docket No. 7440, *Pet. of Entergy VY for Amendment of their CPG And other approvals required under 10 V.S.A. §§ 6501-6504 and 30 V.S.A. §§ 231(a), 248 & 254, For authority to continue after March 21, 2012, Operation of the VY Station, including the storage of SNF*, February 11, 2009, available at http://www.state.vt.us/psb/document/7440VT_Yankee_Relicensing/Supplemental/DPS_Nagle_Direct_Final.pdf.

¹⁹ This economic impact study was prepared at the request of Entergy, and is sometimes known as the “Heaps Report.” Richard W. Heaps, “The Economic Impact of the VY Station on Windham County and Vermont,” Northern Economic Consulting Inc., prepared for Vermont Yankee, July 12, 2012 (Heaps Report”) available at <http://psb.vermont.gov/sites/psb/files/docket/7862VYRelicense/Exhibit%20EN-RWH-3.PDF>

²⁰ This scenario (“2013 SAFSTOR”) assumed that “the VY Station ceases producing power at the end of 2012. The facility is placed and maintained in SAFSTOR and the entire decommissioning process continues through 2074. At the close of 2074 site restoration is completed and no activity or structures associated with the VY Station remain.” Heaps Report at 18.

²¹ This scenario (“2032 Prompt Decommissioning”) assumed that the VY Station would continue operating through the year 2031. “The plant then begins the decommissioning process. At the end of 2083 site restoration is complete and no activity or structures associated with the VY Station remain.” Heaps Report at 12.

1 a 2032 retirement with deferred decommissioning thereafter.²² A third recent study was
2 published in December 2014 after the announced retirement of Vermont Yankee, and
3 tracked the “progressive reduction of economic impacts brought about by
4 decommissioning” on the Tri-County Region in Southern Vermont, North-Central
5 Massachusetts, and Southwest New Hampshire.²³ Finally, I am aware of the study
6 prepared by Brattle Group in 2016 and discussed in the testimony of Dr. Berkman on
7 behalf of the Petitioners.²⁴

8 In one way or another, these studies point to the importance of Vermont Yankee having
9 been for many years a significant source of tax revenues and employment for workers in
10 Southern Vermont and neighboring regions, with significant public and private interest in
11 understanding the implications for workers and local economies of different levels of
12 economic activity at the Vermont Yankee site in different periods of time. To me, this is
13 important context for my deciding to encourage the Board to weigh heavily the near-term
14 economic activity that would flow from approval of the Proposed Transaction, compared
15 to the baseline ‘status quo’ conditions reflected in Entergy’s original decommissioning
16 plan for Vermont Yankee.

²² This scenario (“2032 Deferred Decommissioning”) assumed that the VY Station would continue operating through the year 2031. “The plant then enters the SAFSTOR process as described in the TLG reports. At the close of 2093 site restoration is complete and no activity or structures associated with the VY Station remain.” Heaps Report at 15.

²³ UMass Donahue Institute, Economic and Public Policy Research, “Economic Impacts of Vermont Yankee Closure,” prepared for the Franklin Regional Council of Governments, December 2014 at 3.

²⁴ See Berkman Testimony and Dr. Berkman’s report, “The Economic Impacts of Decommissioning Vermont Yankee – A Comparison of Two Approaches,” December 15, 2016.

1 Q14. **Why did you decide to call these many studies to the attention of the Board in your**
2 **own testimony?**

3 A14. The fact that there are so many studies examining jobs and other economic impacts of
4 activities taking place on the Vermont Yankee site highlights this as a material issue of
5 importance to Vermont and the adjoining state governments, to the local communities,
6 and to the workers potentially or actually affected by such activities.

7 Q15. **Are you also aware of various activities that have been undertaken by the State of**
8 **Vermont, local communities or non-governmental organizations with respect to the**
9 **decommissioning and site-restoration process at Vermont Yankee?**

10 A15. Yes. I understand that a variety of groups have spent significant time, attention, and care
11 in attempting to understand and weigh in on the character and pace of decommissioning
12 activities at the Vermont Yankee site. In 2014, the State of Vermont chartered a Nuclear
13 Decommissioning Citizens Advisory Panel (“NDCAP”), comprised of more than a dozen
14 State officials and other stakeholders, to hold public meetings to discuss, learn about,
15 serve as a conduit for public information and education, encourage community
16 involvement, and provide advice to State officials on issues relating to Vermont Yankee’s
17 decommissioning.²⁵ Since 2014, the NDCAP has held regular meetings and continues to
18 monitor and comment on developments relating to site restoration and decommissioning
19 issues.

²⁵ <http://publicservice.vermont.gov/electric/ndcap>.

1 The Town of Vernon, in which the Vermont Yankee site is located, has undertaken a
2 number of activities to anticipate and mitigate impacts of the closure of Vermont Yankee,
3 including on land uses in the locality.²⁶ In anticipation of the eventual closure of
4 Vermont Yankee and in advance of Entergy’s August 2013 announcement that the plant
5 would close at the end of 2014, the Town of Vernon had engaged the Windham Regional
6 Commission (“WRC”) to prepare a ‘resiliency action plan’ for the Town to “provide the
7 Town of Vernon with objective information about the eventual closure of the plant such
8 that it can make its own informed decisions.”²⁷ WRC’s Resiliency Action Plan was
9 published in June of 2012 and reports that the manner in which “Vermont Yankee is
10 ultimately decommissioned once the plant closes will directly influence the nature of the
11 impacts experienced by Vernon....”²⁸ Further, the WRC concluded that its

12 research of other plant closures, and analysis of the information
13 provided by Vermont Yankee through decommissioning cost analyses
14 and Vermont Public Service Board dockets, indicates that prompt and
15 complete decommissioning, or DECON immediately upon closure,
16 could possibly support a more orderly transition and be less of a
17 shock than SAFSTOR. This may seem counterintuitive – that the
18 immediate dismantlement of the plant could cause less of a shock
19 than shutting the facility down and leaving it intact for years or
20 decades. The reason relates primarily to the rate at which jobs at the
21 plant could be phased out.

²⁶ See, e.g.: Town of Vernon, “Vermont 2013 Town Plan” at 14. (“At a minimum, the town should assume that the site will not be available for redevelopment for a period of at least 10 years after the intent to cease operations is announced. It will take at least this long to develop, review and approve the decommissioning plan, and complete the dismantlement of the facility.”)

²⁷ Windham Regional Commission, “Resiliency Action Plan for the Town of Vernon in Preparation for the Eventual Closure of the Vermont Yankee Nuclear Power Station,” prepared for the Town of Vernon Planning Commission, June 22, 2012 (“WRC Resiliency Action Plan”) at 2.

²⁸ WRC Resiliency Action Plan at 6.

1 The economic impact studies provided by Entergy suggest that
2 DECON provides a stronger buffer against overall job loss than
3 SAFSTOR. Under the DECON strategy, jobs would be retained for a
4 period of several years as the plant is dismantled over an estimated
5 period of 9 to 10 years. Under the SAFSTOR strategy, the plant
6 would cease operation and be maintained in a stable condition until
7 dismantlement begins. As is noted above, actual dismantlement may
8 not begin for years or decades after the plant ceases operations.²⁹

9 Elsewhere, the WRC – which represents 27 member towns, including Vernon, and
10 46,000 residents in southeastern Vermont³⁰ – had advocated that the Board take into
11 consideration the impacts of Vermont Yankee’s closure and decommissioning on the
12 ‘orderly development of the region’ and that the Board support the WRC’s position that
13 “upon shutdown the orderly development of the region requires the prompt
14 decommissioning of the VY Station and complete site restoration.”³¹ The WRC stated
15 further that:

16 [The Vermont Yankee] site is a long established industrial
17 development that is ideally situated with access to road, river, rail,
18 and electrical power. This highest use of the land as an industrial site

²⁹ WRC Resiliency Action Plan at 9 (internal footnotes omitted).

³⁰ <http://www.windhamregional.org/about>; Initial Brief of Windham Regional Commission, Docket No. 7862, *Am. Pet. of Entergy VY for amendment of their CPG and other approvals required under 30 V.S.A. § 231(a) for authority to continue after March 21, 2012, operation of the VY Station, including the storage of SNF*, 8/16/2013 (“WRC Initial Brief (2013)”) at 2.

³¹ WRC Initial Brief (2013) at 20. In 2008, the WRC had previously stated its view that “Decommissioning should follow shutdown as soon as possible,” in a letter from James P. Matteau, WRC Executive Director, to Vermont Public Service Board, “Summary of Recommendations,” in *Re: Am. Pet. of Entergy VY for amendment of their CPG and other approvals required under 30 V.S.A. § 231(a) for authority to continue after March 21, 2012, operation of the VY Station, including the storage of SNF*, April 16, 2008 at 9.

1 serves the surrounding communities and workforce, and brings
2 substantial benefit to the region.³²

3 WRC recognizes the importance of rapidly returning the VY site to
4 productive economic use as being essential to the orderly
5 development of the region.....³³

6 Delayed decommissioning...also raises other societal cost issues, as it
7 delays the time at which the Vermont Yankee site will be restored. ”³⁴

8 Prompt decommissioning returns some of the land to productive use
9 more rapidly, and will return all of the land to productive use once the
10 remaining spent fuel has been removed. Prompt decommissioning
11 also allows for the use of existing plant workers to assist with the
12 dismantling of structures, which provides critical legacy knowledge
13 that can add efficiency. And, prompt decommissioning provides
14 greater certainty and less risk, both technically and financially.
15 Finally, prompt decommissioning releases the site from regulatory
16 control sooner than SAFSTOR, which increases regulatory efficiency
17 and avoids the costs of having government and non-government
18 organizations tied up in expensive oversight and litigation.³⁵

19 While the WRC’s recommendations on the specific methods and means for site
20 restoration may differ from those proposed by the Petitioners – with the Board being in
21 the eventual position of evaluating these varied approaches – it is nonetheless clear that
22 the overall decommissioning timeline anticipated in the Proposed Transaction is in line
23 with the “prompt decommissioning” recommended by the WRC.

24

³² WRC Initial Brief (2013) at 21.

³³ WRC Initial Brief (2013) at 24

³⁴ WRC Initial Brief (2013) at 45.

³⁵ WRC Initial Brief (2013) at 47.

1 Another regional group that has been active in anticipating potential adverse economic
2 impacts of a shutdown of Vermont Yankee before the end of its full operating license is
3 the Southeastern Vermont Economic Development Strategies (“SeVEDS”), a non-profit
4 organization now affiliated with the Brattleboro Development Credit Corporation.³⁶ A
5 SeVEDS task force with the responsibility to study the economic and other impacts that
6 would result from the potential closure of the Vermont Yankee nuclear power station
7 concluded in March 2012 that it supported immediate dismantlement of the facility and
8 restoration of the site, so as to avoid delaying the time when the site would be available
9 for reuse.³⁷

10 Vermont’s Southwest Region Planning Commission (“SWRPC”) has also been “devoting
11 time and resources to helping the public understand the situation [the socio-economic
12 impact of the Vermont Yankee closing] in the interests of developing appropriate
13 responses and strategies.”³⁸ SWRPC has sponsored meetings, case studies, and “lessons
14 learned”³⁹ for communities facing the unexpected early retirement of a nuclear facility.

³⁶ <http://seveds.com/>. See also, SeVEDS’s Comprehensive Economic Development Strategy Report describing SeVEDS mission and history. SeVEDS, “2014 S.M.A.R.T. CEDS Report” at 6. <http://seveds.com/wp-content/uploads/2012/08/FINALCEDSReport.2013.pdf>.

³⁷ “The committee wishes to go on record as supporting immediate dismantlement (DECON) as opposed to SAFSTOR. The latter would delay reuse of the plant site for up to 80 years and withhold the benefits of work crews doing decommissioning work soon after closure.” SeVEDS, “Windham County Post-VY Economic Mitigation and Growth Report of the Post-Vermont Yankee Task Force of the Southeast Vermont Economic Development Strategy Planning Group (SeVEDS),” March, 2012, at 4, available at <http://seveds.com/wp-content/uploads/2012/03/PostVY.pdf>.

³⁸ <http://www.swrpc.org/VermontYankee>.

³⁹ “When People and Money Leave (and the Plant Stays) – Lessons Learned from the Closure of the Vermont Yankee Power Station: A Tri-Region Experience,” Presented Oct 14, 2016 in Brattleboro,

1 Finally, given Vermont Yankee’s proximity to two other neighboring states –
2 Massachusetts and New Hampshire – there are also a number of other stakeholder groups
3 focusing attention on economic activity associated with Vermont Yankee’s shut-down
4 and decommissioning. For example, the Governor of New Hampshire has a working
5 group on the decommissioning of Vermont Yankee,⁴⁰ and the Tri-State Region hosts an
6 “information exchange among organizations in the three counties affected by the
7 Vermont Yankee closure, including Southwest Region Planning Commission (Keene,
8 NH), the Windham Regional Commission (Brattleboro, VT) and the Franklin County
9 Regional Council of Governments (Greenfield, MA).”⁴¹

10 **Q16. What, in your opinion, is the relevance of these many Vermont-Yankee**
11 **decommissioning stakeholder groups to the Board’s review of the Proposed**
12 **Transaction?**

13 A16. These state, regional and local groups have collectively supported the development of
14 information that describes various community values associated with the character and
15 pace of Vermont Yankee’s decommissioning. Many of these groups have publicly stated
16 their preference for earlier decommissioning than would be allowed under a SAFSTOR
17 approach (the one previously selected by Entergy).

Vermont (“Lessons Learned Report”), available at
<http://www.swrpc.org/files/LessonsLearnedWhitePaper.pdf>.

⁴⁰ “Governor Hassan Announces Working Group for Vermont Yankee Decommissioning Press Release”
August 30, 2013, available at <http://governor.nh.gov/media/news/2013/pr-2013-08-30-vermont-yankee.htm>.

⁴¹ <http://www.swrpc.org/VYstakeholders>. This is the group that sponsored the 2014 study prepared by
UMass Donahue Institute, Economic and Public Policy Research, “Economic Impacts of Vermont
Yankee Closure,” *supra* at n. 23.

1 Q17. **What do you conclude from these various elements of the context in which the**
2 **Proposed Transaction has come before the Board for review and approval?**

3 A17. I think that these studies and local stakeholder statements provide evidence that public
4 policy and community values support a finding that earlier decommissioning of Vermont
5 Yankee is in the public good. I encourage the Board to give weight to such community
6 values as it reviews the various elements and expected outcomes of the Proposed
7 Transaction.

8 Q18. **What is the basis for your discussion of the standard of review that the Board will**
9 **apply in this proceeding?**

10 A18. As a former utility regulator and observer of utility regulation in states around the U.S., I
11 undertook to review various Board orders (and relevant portions of the Vermont statutes)
12 to understand the factors that the Board will need to take into account as it considers the
13 merits of the Proposed Transaction. This review has provided me with a foundation for
14 making recommendations for how the Board might consider whether the Proposed
15 Transaction supports the public good.

16 Q19. **What types of Board decisions did you review?**

17 A19. I reviewed orders issued by the Board that appeared relevant to the Board's review of the
18 Petitioners' request for approval of a Certificate of Public Good ("CPG"). These
19 included: (a) several CPG orders relating to Vermont Yankee;⁴² (b) Board orders relating

⁴² Docket 8300, *Pet. of Entergy VY for a CPG to construct a second independent spent fuel storage installation storage pad and related improvements, including installation of a new diesel generator with an electrical rating of approximately 200 kW, at the VY Station*, Order of 6/17/2016 ("Docket. 8300, Board Order of 6/17/16"); Docket 7862, Board Order of 5/1/14; Docket 7862, Board Order of 3/28/14;

1 to decommissioning of other facilities and CPGs for other energy facilities;⁴³ and (c)
2 Board orders related to mergers and acquisitions.⁴⁴ I do not mean to represent that I have
3 performed a comprehensive review of each and every Board order that *might* be relevant
4 to the matter at hand in this proceeding. Rather, I sought to glean insights, from the
5 Board orders I did review, about the types of factors the Board takes into account in
6 reviewing a petition such as the Proposed Transaction.
7

Docket 7404; *Pet. of Entergy VY for Approval of an Indirect Transfer of Control of Each Company, Consent to Pledge of Assets, Guarantees and Assignments of Contracts and Amendment to the CPG to Reflect a Name Change, Replacement of \$60 Million Guarantee with \$60 Million Letter of Credit and Substitution of \$700 Million Support Agreement for Two Inter-Company Credit Facilities*, Order of 6/24/2010 (“Docket 7404, Board Order of 6/24/10”); Docket 6812, *Pet. of Entergy VY for a CPG to modify certain generation facilities at the Vermont Yankee Station in order to increase the Station’s generation output*, Order of 3/15/2004 (“Docket 6812, Board Order of 3/14/2004”); Docket 6545, *Invest. into General Order No. 45 Notice filed by Vermont Yankee Corp. re: proposed sale of Vermont Yankee Station to Entergy VY*, Order of 6/13/2002 (“Docket 6545, Board Order of 6/13/02”).

⁴³ Docket 7628, *Joint Pet. of GMP Vermont Electric Cooperative, Inc., VELCO and Vermont Transco LLC for a CPG for a wind electric generation facility on Lowell Mountain in Lowell, Vermont, and the installation or upgrade of approximately 16.9 miles of transmission line and associated substations in Lowell, Westfield and Jay, Vermont*, Order of 5/31/2011 (“Docket 7628, Board Order of 5/31/11”); Docket 6905, *Pet. of CVPS re Comprehensive Settlement Agreement of the Lamoille River Hydroelectric Project*, Order of 12/22/2006 (“Docket 6905, Board Order of 12/22/06 ”); Docket 5330, *Application of twenty-four electric utilities for a CPG authorizing execution and performance of a firm power and energy contract with Hydro-Quebec and a Hydro-Quebec Participation Agreement*, Order of 8/21/1989 (“Docket 5330, Board Order of 8/21/89”).

⁴⁴ Docket 7770, *Am. Joint Pet. of CVPS, Danaus Vermont Corp., Gaz Métro, Gaz Métro inc., NNEEC, GMP and VLITE*, for approval of: (1) the merger of Danaus and CVPS; (2) the acquisition by NNEEC of the common stock of CVPS; (3) the amendment to CVPS’s Articles of Assoc.; (4) the merger of CVPS and GMP; and (5) the acquisition by VLITE of a controlling interest in VELCO, Order of 6/15/2012 (“Docket 7770, Board Order of 6/15/2012”); Docket 7213, *Joint Pet. of GMP, NNEEC, and Northstars for approval of: (1) the merger of Northstars and GMP; (2) the acquisition by NNEEC of the common stock of GMP; and (3) the amendment to GMP’s Articles of Incorporation*, Order of 3/26/2007 (“Docket 7213, Board Order of 3/26/07”). I understand that the Proposed Transaction is not considered a merger by the Petitioners.

1 Q20. **What insights did you take away from these Orders about the appropriate standard**
2 **of review that the Board should apply in reviewing the Proposed Transaction?**

3 A20. As a former regulator, I believe these Board orders provide quite relevant guidance for
4 reviewing the matters in this proceeding. For example, there are aspects of the Board’s
5 public-good determinations that are common in many cases, such as the examination of
6 issues related to the attributes of the *petitioner* (e.g., financial stability, technical
7 competency, and the ability to be a fair partner in conducting business in Vermont).
8 There are other issues relating to the attributes of the proposed *activity*, such as whether
9 the proposed project, merger or transaction would contribute to lower costs to consumers
10 or is needed for the provision of reliable service. The Board has taken various factors
11 into account on a case-by-case basis as may be relevant to the matter under review.⁴⁵

12 Q21. **Has your review led you to any conclusions regarding the factors you think the**
13 **Board should take into account and weigh heavily in its review of the Proposed**
14 **Transaction?**

15 A21. Yes. Based on my review of these prior Board orders in conjunction with the substance
16 of this proposal, I recommend that the Board focus its review on – and give substantial
17 weight to – at least the following factors:

18 ▪ Factors relating to the acquiring company in the Proposed Transaction:⁴⁶

⁴⁵ Docket 7862, Board Order of 3/28/14 at 17. (“The factors considered by the Board in making a general good finding necessarily vary from case to case depending on specific circumstances.”)

⁴⁶ These factors are part of the Board’s considerations of petitions for CPGs and for review of acquisitions such as in this Petition in determining whether a proposed activity or transaction will promote the public good. Docket 7862, Board Order of 3/28/14 at 17, 27-51. *See also* Docket 7404, Board Order of 6/24/10; Docket 7082; *Pet. of Entergy VY for a CPG to construct a dry fuel storage facility at the Vermont Yankee*

- 1 o technical competence, in particular with respect to the
2 decommissioning of facilities and sites;
3 o financial strength/soundness;
4 o reputation and conduct, such that the company can be expected to act
5 as a fair partner in business transactions with the citizens of Vermont
6 and in meeting its commitments to compliance with any memoranda of
7 understanding entered between the state and the applicant.
- 8 ▪ Factors relating to the activities anticipated in the Proposed Transaction, as
9 compared to the status quo in the absence of it:
- 10 o Alignment with Vermont’s energy goals;⁴⁷
11 o Alignment with community values as expressed in local town and
12 regional plans and other documents;⁴⁸
13 o Economic benefits to the State of Vermont and its residents,⁴⁹
14 economic impacts on employment and the local economy⁵⁰ and
15 contribution to orderly development of the region and its economy;⁵¹

Station, in Vernon, Vermont, Order of 4/26/2006 (“Docket 7082, Board Order of 4/26/06”) at 14, 70, 74, 86; Docket 6150, *Joint Pet. of Bell Atlantic Corp. and GTE Corp. for approval of Agreement and Merger*, Docket 6150, Order of 9/13/99 at 48–49; Docket 5900, *Joint Pet. of New England Telephone & Telegraph Co. and Bell Atlantic Corp. for Approval of a Merger*, Order of 2/26/97 at 9-10. The physical location of the acquiring company is not as critical as ensuring that the focus and management of their service provision remains based in Vermont. *See* Docket 770, Board Order of 6/15/20128; *see also*: Docket 7213, Board Order of 3/26/07.

⁴⁷ Docket 7628, Board Order of 5/31/11 at 3; Docket 7862, Board Order of 3/28/14 at 80.

⁴⁸ Docket 7628, Board Order of 5/31/11 at 25.

- 1 o Impacts on the environment,⁵² aesthetics,⁵³ and inter-generational
2 equity,⁵⁴ and on public safety relating to the non-radiological aspects
3 of decommissioning and site restoration.⁵⁵

⁴⁹ Docket 6812, Board Order of 3/14/04 at 25 (“To satisfy the criterion of 30 V.S.A. § 248(b)(4), we must find that the uprate ‘will result in an economic benefit to the state and its residents.’ Entergy and the Department, both in the Memorandum of Understanding and generally, identify benefits to the state from the uprate which they assert will exceed its costs... In the following sections, we analyze the potential benefits of the uprate and then weigh the costs. We note, as the Department points out, that the law does not set out how much economic benefit there should be, but rather simply directs that there be an economic benefit.”). *See also* Docket 7082, Board Order of 4/26/06 at 3 (“The most significant factor in our decision is the economic benefit of the facility.”).

⁵⁰ Docket 7862, Board Order of 3/28/14 at 31, 58; Docket 7628, Board Order of 5/31/11 at 4.

⁵¹ Docket 6812, Board Order of 3/14/04 at 19 (quoting § 248(b)(1) and finding “We conclude that the proposed uprate of Vermont Yankee will not unduly interfere with the orderly development of the region. It will have minimal impact outside the immediate area of Vermont Yankee. In addition, as shown by the findings above, it is consistent with the relevant town and regional plans.”). Also, the Board’s new Net Metering policy includes financial incentives for locating net-metered systems in preferred locations (e.g., brownfield sites): “Currently, net-metering systems over 15 kW receive the same price regardless of size or location. The proposed rule sets different price levels to encourage siting in developed areas like roofs, parking lots, landfills, gravel pits and on town-preferred sites.” Vermont Public Service Board, Media Release “Vermont Public Service Board Proposes Changes to Net Metering,” November 7, 2016.

⁵² Docket 7862, Board Order of 3/28/14 at 61-71 (regarding 30 V.S.A. §§ 231 and 248). *See also*, Docket 5330, Board Order of 8/21/89 at 4 (“this Board must consider all the environmental effects of facilities within the state, and it must also consider the environmental (and other) consequences of projects beyond the state to the extent that they affect ‘the general good of the state’....Thus, we have concluded that the scope of this proceeding should include consideration of the proposed contracts’ environmental and economic effects, to the extent that they materially affect the state of Vermont.”) (emphasis in original).

⁵³ Docket 7862, Board Order of 3/28/14 at 71-73.

⁵⁴ Docket 7628, Board Order of 5/31/11 at 5. (“Our second significant area of concern is the lack of any proposal from GMP to secure a decommissioning fund and to make it bankruptcy and creditor remote. GMP takes the position that these types of requirements are unnecessary because it is a regulated utility. We disagree, and impose conditions on GMP that are largely consistent with the decommissioning conditions we have imposed on merchant developers seeking to construct wind generation facilities in Vermont. In doing so, we are ensuring that there is inter-generational equity associated with the decommissioning costs of the proposed project. That is, the ratepayers that utilize the power produced by the proposed project will also be the ratepayers that fund its decommissioning through the payment of rates over the life of the facility. Given the importance of proper decommissioning to our approval of the proposed project, we conclude that these requirements are necessary and appropriate.”)

1 Q22. **Please explain why you think that these particular factors relating to the Proposed**
2 **Transaction are the ones that should be the focus of the Board’s attention.**

3 A22. I understand that the Board has previously found that the factors relevant to its ability to
4 make a public good finding will necessarily and appropriately vary from case to case
5 depending on specific circumstances.⁵⁶ The attributes of the owner/operator of a business
6 subject to the Board’s jurisdiction are commonly reviewed in all CPG proceedings, and
7 are relevant here. The other factors I note are those that relate to how the Proposed
8 Transaction will directly or indirectly affect citizens and the economy and environment in
9 which they live. The key theme across all of these factors is the question of whether the
10 Proposed Transaction will accomplish decommissioning and restoration of the Vermont
11 Yankee site faster than would otherwise occur in the absence of the Proposed
12 Transaction, and in so doing provide benefits that support the public good. This theme
13 mirrors the one the Board relied upon in Docket No. 7862 (relating to Entergy’s petition
14 for an amendment to its CPG), where the Board found that there were “material benefits
15 to the state that would not be attainable for Vermonters absent the MOU.”⁵⁷ These
16 material benefits included mitigation of job losses and promotion of economic

⁵⁵ Docket 7862, Board Order of 3/28/14 at 61 (“In making a determination of the general good under Section 231, the Board may consider whether the continued operation of VY Station will have ‘an undue adverse effect on aesthetics, historic sites, air and water purity, the natural environment, the use of natural resources, and the public health and safety.’”) (citing to 30 V.S.A. §248(b)(5).).

⁵⁶ Docket 7862, Board Order of 3/28/14 at 16-17.

⁵⁷ Docket 7862, Board Order of 3/28/14 at 3.

1 development,⁵⁸ support for orderly economic development,⁵⁹ the likelihood that site
2 restoration would occur sooner rather than later,⁶⁰ and alignment with and/or support for
3 the state’s clean energy policy.⁶¹

4 **Q23. Are other witnesses addressing these key factors in their testimony on behalf of the**
5 **Petitioners?**

6 **A23.** Yes. I am providing testimony specifically on the question of the alignment of the
7 Proposed Transaction with Vermont’s energy policies. Other witnesses for the
8 Petitioners will address the other factors in their testimony.

⁵⁸ *Id.* (“Entergy VY commits to pay the State \$10 million over the next five years to promote economic development in Windham County, which will aid the area as jobs are lost following the closure of the VY Station.”)

⁵⁹ *Id.* at 52 (“The provisions of the MOU related to site restoration (paragraphs 5, 6 and 7) likely will make some or all portions of the VY Station property available sooner for productive reuse, consistent with the orderly development of the Town of Vernon and Windham County, than would be the case in the absence of the MOU.”); *see also id.* at 53 (including findings that the petition would not interfere with orderly development: “in making its determination of general good under Section 231 in this proceeding, the Board is considering the relevant criteria under Section 248(b), including the issue of whether the continued operation of the VY Station until December 31, 2014, will ‘unduly interfere with the orderly development of the region with due consideration having been given to the recommendations of the municipal and regional planning commissions, the recommendations of the municipal legislative bodies, and the land conservation measures contained in the plan of any affected municipality.’”).

⁶⁰ *Id.* at 3: (“Entergy VY agrees to conditions that will ensure adequate site restoration and increase the likelihood that the site will be available for other uses more rapidly than the Nuclear Regulatory Commission (‘NRC’) would require. These include: (1) commitment to complete a site assessment study by the end of this year and to a process for developing the appropriate standard for site restoration that will be determined by the Board; (2) establishment of a separate, \$25 million fund specifically for site restoration, supported by a guarantee by Entergy VY’s parent corporation to provide additional funds if the site restoration fund falls below \$60 million; and (3) a commitment to commence site restoration promptly after completing radiological decommissioning.”)

⁶¹ *Id.* at 3, 79 (In findings 201-204: finding that Vermont’s Comprehensive Energy Policy did not take a position on Vermont Yankee’s closure, and that with Entergy’s contribution to the Clean Energy Development Fund – Entergy’s commitment to pay \$5.2 million, with half of the funds to be used to benefit Windham County – that the proposed activity (i.e., keeping Vermont Yankee open until the end of 2014) was “in compliance with the *Electric Energy Plan* approved by the Department under 30 V.S.A. § 202.”)

1 Q24. **In identifying these factors, are you suggesting that the Board will have to make**
2 **findings based on a quantification of the impacts noted above?**

3 A24. No. I note the Board’s finding in Docket 7862, with reference to the Board’s statute
4 governing site preparation or construction of generation facilities, that the contemplated
5 activity would result in an economic benefit to the State and its residents: “Section 248
6 does not require us to quantify exactly how much economic benefit the State would
7 receive from approval of the MOU; we need only determine that there will be an
8 economic benefit.”⁶²

9 Q25. **Please start by describing your understanding of Vermont’s energy policies.**

10 A25. My understanding of Vermont’s energy policies is greatly informed by my many years as
11 a resident of New England and as a participant in regional discussions about energy and
12 environmental impacts of energy production and use, as well as by my review of various
13 planning documents published by the State of Vermont.

14 I begin my description of the State’s energy policy at the place where Vermont’s new
15 2016 Comprehensive Energy Plan⁶³ (“CEP”) begins – by pointing to the foundational
16 goals that shape Vermont’s energy policy:

⁶² *Id.* at 59, citing Docket 6812, Board Order of 3/14/04 at 25. I note also that the Board Order in Docket 6905 states that “[a]ll parties agree that there is uncertainty regarding how much habitat would be opened up with removal of Peterson.....However, all parties... agree that, at a minimum, removal of Peterson would provide some environmental benefit.” Docket 6905, Board Order of 12/22/06 at 11 (internal citation omitted). That Order further states that: “a complete cost-benefit analysis should not be based entirely on hard numbers, but should take into account benefits that are not easily converted to dollars.” Docket 6905, Board Order of 12/22/06 at 15.

⁶³ Vermont Department of Public Service Comprehensive Energy Plan 2016 (“CEP”), available at: http://publicservice.vermont.gov/publications-resources/publications/energy_plan/2015_plan.

1 Vermont’s energy policy, as codified in 30 V.S.A. § 202a(1),
2 establishes these state goals:

3 *To assure, to the greatest extent practicable, that Vermont can*
4 *meet its energy service needs in a manner that is adequate,*
5 *reliable, secure, and sustainable; that assures affordability and*
6 *encourages the state’s economic vitality, the efficient use of*
7 *energy resources and cost effective demand side management;*
8 *and that is environmentally sound.*

9 Energy adequacy, reliability, security, and affordability are essential
10 for a vibrant, resilient, and robust economy. Energy efficiency is a
11 driver of productivity. Environmentally sound energy policy rises in
12 prominence in the context of our urgent need to mitigate the global
13 climate change that is resulting from greenhouse gas emissions while
14 also advancing local environmental sustainability. Vermonters’ health
15 is a necessary consideration, shaped by infrastructure and by both
16 economic and environmental forces.⁶⁴

17 ...

18
19 Expanding upon the statutory goal of 25% renewable by 2025 (10 V.S.A.
20 § 580(a)), this CEP establishes the following set of goals:

- 21 • Reduce total energy consumption per capita by 15% by 2025, and by
22 more than one third by 2050.
- 23 • Meet 25% of the remaining energy need from renewable sources by
24 2025, 40% by 2035, and 90% by 2050.
- 25 • Three end-use sector goals for 2025: 10% renewable transportation,
26 30% renewable buildings, and 67% renewable electric power.⁶⁵

27 This CEP establishes two goals for reduction in greenhouse gas (GHG)
28 emissions from Vermont’s energy use, both of which are consistent with
29 the renewable energy and energy use goals:

- 30 - 40% reduction below 1990 levels by 2030, and
- 31 - 80% to 95% reduction below 1990 levels by 2050.⁶⁶

⁶⁴ CEP, Executive Summary at 2 (emphasis in original).

⁶⁵ CEP, Executive Summary at 2 (emphasis in original omitted).

⁶⁶ CEP, Executive Summary at 4 (emphasis in original omitted).

1 In my testimony, I refer to these foundational goals in the CEP as “clean energy
2 goals.”

3 **Q26. In that context, how does the Proposed Transaction and the new decommissioning**
4 **plan for Vermont Yankee – a retired nuclear station that no longer produces**
5 **electricity – fit into the goals articulated by the new 2016 CEP?**

6 A26. The CEP is premised on the many changes that are underway in Vermont’s and New
7 England’s energy systems. Many, if not most, of the strategies and policy instruments
8 discussed in the CEP are not directly relevant for the specific issues raised by the
9 Proposed Transaction. In fact, the CEP acknowledges Vermont Yankee’s retirement
10 when it discusses the role of nuclear energy in Vermont’s electricity mix.
11 There are, nonetheless, various elements of the CEP that could be supported by the
12 Proposed Transaction’s goal to render much – and eventually all – of the site available
13 for other productive uses as quickly as possible through the accelerated schedule for
14 decontaminating and dismantling the structures and materials on the site, and then
15 restoring the site for other land uses.

16 In this context, a restored brownfield site that formerly hosted Vermont Yankee may
17 provide an attractive site for renewable or other non-nuclear power generation in the
18 future. The Board has recently signaled its policy to create financial incentives to
19 encourage development of larger renewable projects on ‘preferred sites,’ including ones

1 that are brownfields.⁶⁷ A large brownfield site with existing transmission infrastructure
2 and historical industrial land uses could provide an attractive site for developing utility-
3 scale renewable projects.

4 Specifically, the Vermont Yankee site is physically supported by existing transmission
5 infrastructure,⁶⁸ which could provide an economically attractive element for potential
6 reuse of the site for power generation (e.g., utility scale solar) in the future. The CEP
7 speaks of the importance of developing energy resources in ways that “help to avoid
8 costly transmission upgrades”⁶⁹ and that “[o]ptimize land use choices to minimize local
9 and global environmental impact, including balancing land use among competing needs
10 in the state for energy, non-energy development, housing, transportation, working lands
11 for agriculture and forestry, and other purposes.”⁷⁰

12 Vermont’s 2040 goals for reliance on renewable electricity supply will require substantial
13 additions of renewable capacity between now and then. The CEP encourages strategies
14 that “[m]aximize opportunities to encourage siting of renewable energy on the built

⁶⁷ Vermont Public Service Board, Proposed changes to “5.100 Rule Pertaining to Construction and Operation of Net-Metering Systems,” November 7, 2016, at 8-9, available at http://psb.vermont.gov/sites/psb/files/rules/Proposed%20Rule%205.100%20October%202016%20CLEAN_post%20ICAR%20jg.pdf.

⁶⁸ WRC Resiliency Action Plan at 11.

⁶⁹ CEP at 12. The CEP also states a goal of “Supporting development of renewable energy that uses natural resources efficiently and related planned energy industries in Vermont, and the jobs and economic benefits associated with such development, while retaining and supporting existing renewable energy infrastructure.” CEP at 3.

⁷⁰ CEP, Executive Summary at 3. Also: “Responsible land use choices will enable us to meet our energy goals while advancing the state’s land use goals of compact centers surrounded by working lands.” CEP, Executive Summary at 4.

1 environment, in already disturbed areas, or co-located with other uses in order to
2 minimize conflicts with other land uses and users.”⁷¹

3 The CEP also recognizes that “the *power density* — the amount of energy per given unit
4 of volume, area, or mass — of existing renewables is orders of magnitude less than it is
5 for fossil fuels. As a result, renewables require much more space on the landscape than
6 do traditional, centralized generators... [R]enewable electric sources need to be sited
7 where the renewable resource (wind, sun, water) exists, and where they can be cost-
8 effectively built and connected to the grid — which often means greater visibility, at least
9 when compared with the large, centralized, often distant conventional generation to
10 which we’ve become accustomed. And if sited far from load, electric sources must be
11 connected with adequate transmission, which is both a limiting factor in siting
12 renewables and a siting challenge unto itself.”⁷²

13 Without knowing specifically today whether the Vermont Yankee site will be
14 economically attractive for developing solar or other renewable projects, the site’s
15 position on the interstate high-voltage grid will provide an advantage for pursuing this
16 option in the future, once site restoration is completed. The ability to arrive at that
17 completion date decades earlier than originally anticipated by the Entergy
18 decommissioning plan is a benefit of the Proposed Transaction.

⁷¹ CEP, Executive Summary at 10.

⁷² CEP at 58 (emphasis in original).

1 Q27. **Thus, do you conclude that the Proposed Transaction is consistent with Vermont’s**
2 **energy goals?**

3 A27. Yes, as I describe above. At a minimum, it does not conflict with Vermont’s energy
4 goals.

5 Q28. **Please explain what you meant when you said, “At a minimum, it does not conflict**
6 **with Vermont’s Energy goals.**

7 A28. Vermont’s CEP does not assume any electrical generation on the Vermont Yankee site
8 and is silent on what might eventually be done on the site to enable it to host other energy
9 projects. I conclude, therefore, that, at a minimum, the Proposed Transaction does not
10 conflict with the state’s energy goals or plans.⁷³

11 Q29. **In addition to those potential long-term energy-related benefits from the Proposed**
12 **Transaction, are there other issues that you want to call to the Board’s attention**
13 **with regard to the Petition’s alignment with other public policy goals or public-good**
14 **factors?**

15 A29. Yes. Separate from energy-related benefits, there are several aspects of the proposal that
16 potentially support promotion of the public good in Vermont. I mention them here and

⁷³ I note that in Docket 7862, Board Order of 3/28/14 at 79, 80, the Board found that “[t]he CEP does not state a position as to the closure of the VY Station.... Entergy VY has agreed to release approximately \$5.2 million in payments to the CEDF [Clean Energy Development Fund] previously held in escrow, which will now be used to support renewable energy and energy efficiency resources in Vermont, thus furthering the renewable goals of the CEP....However, in light of the reduced period of operation and, in particular, the agreement to release CEDF payments previously held in escrow by Entergy VY, it is evident that the approval of the MOU and a decision to grant a CPG will result in an increase in the availability of resources to fund new renewable projects and, as such, will be compliant with the CEP.” Nothing in the Proposed Transaction is inconsistent with these prior findings.

1 note that the Joint Petitioners' filing includes testimony from subject-matter experts on
2 many of these issues.

3 **Q30. Please describe some of the additional factors that you think the Board should**
4 **consider.**

5 A30. The first one is the Proposed Transaction's potential alignment with community values
6 and orderly economic development objectives in Southern Vermont. I am aware that Mr.
7 Dodson is addressing the goodness-of-fit between the Petitioners' proposal and aesthetic
8 and other elements of the town and regional plan for the area surrounding the Vermont
9 Yankee site. And I am aware that Dr. Berkman is presenting his analysis of the economic
10 impacts of the Proposed Transaction's faster decommissioning process relative to the
11 status quo under Entergy's plan.

12 Additionally, I want to underscore the fact that many stakeholders in Vermont have
13 encouraged early decommissioning of the Vermont Yankee site. The 2013 Settlement
14 Agreement among Entergy and various Vermont state agencies adopted principles for the
15 post-operation period, one of which specifically focused on the principle that "to
16 facilitate the prompt economic redevelopment of the VY Station site, the
17 decommissioning process should occur without unreasonable delay..."⁷⁴ The Board
18 itself found in its Order in Docket 8300 that the "State has an interest in having the site
19 restored to a greenfield condition, which will allow productive economic use. Timely

⁷⁴ Settlement Agreement at 2.

1 decommissioning (which cannot occur until the SNF [spent nuclear fuel] has been
2 removed) facilitates this outcome.”⁷⁵

3 Many parties who participated in the public comments on Entergy’s Final Vermont
4 Yankee Assessment Report encouraged a prompt and effective decommissioning
5 process.⁷⁶ Many of the stakeholders “expressed a lot of passion about the need to begin
6 the decommissioning process as soon as possible...before the 60 years allowed by the
7 NRC.”⁷⁷

8 Similarly, the NDCAP process continues to demonstrate the “strong desire by all
9 stakeholders to see the site restored to a level that allows reuse as an industrial or
10 commercial site.”⁷⁸

11 Additionally, in recent years, many regional and local community groups, including the
12 WRC’s Resiliency Action Plan for the Town of Vernon, the WRC itself,⁷⁹ the SeVEDS,

⁷⁵ Docket 8300, Board Order of 6/17/16 at 21, Finding 75.

⁷⁶ Vermont Yankee Decommissioning and Stakeholder Engagement: Assessment Findings and Recommendations, Consensus Building Institute and Social and Environmental Research Institute, August 29, 2014, available at: http://publicservice.vermont.gov/sites/dps/files/documents/general/Final_VY_Assessment_Report_20140829%20.pdf.

⁷⁷ *Id.* at 4.

⁷⁸ *Id.* at 5.

⁷⁹ “In 2007, the WRC began studying and analyzing the significant regional economic, fiscal, socioeconomic, and cultural impacts of the eventual closure of the Vermont Yankee Nuclear Power Station as part of its engagement in the Vermont Public Service Board (PSB) Certificate of Public Good deliberations related to the plant. The WRC made a conscious decision to remain neutral as to whether or not the plant should continue operations in order to be able to facilitate conversations among all sides of the issue within the region. However, it recognized the important economic, fiscal, physical and cultural presence of the plant in the region and the fact that at some point, due to economics, design life, or regulatory constraints, the plant would eventually cease operation. The WRC therefore put much of its focus on what would be in the region’s best interests when the plant eventually ceased operation,

1 and the SWRPC,⁸⁰ and the other groups in the Tri-County region most directly linked to
2 the Vermont Yankee site have focused significant community engagement on the facility
3 closure and understanding its impacts on the local economies. Many of these local and
4 regional groups have previously stated their support for prompt decommissioning (as I
5 described in Section III, above). The SWRPC has prepared a “lessons learned” report,
6 which examines the disruptions that occur at the time of closure and thereafter. One
7 lesson pointed out in the report is that “[w]hen it comes to a nuclear plant, how it chooses
8 to decommission will have a major impact on the rate of change.”⁸¹ Pointing to the graph
9 I have included as Figure SFT-3, below, the “lessons learned” report made the following
10 observations – which at the time the report was published in October 2016, did not reflect
11 the Proposed Transaction’s change from the Entergy plan’s SAFSTOR method to the
12 more-prompt decommissioning approach now being proposed by the Petitioners:

13 What the graphs show are assumptions by Entergy that when the
14 station shuts down the workforce would shrink from roughly 620 to

whenever and for whatever reason that might be. Based upon the evidence presented by all sides in the PSB dockets, the WRC was able to develop a knowledge base about plant closure impacts on regional employment, taxes, regional income, charitable contributions and other factors, and what closure, decommissioning, spent fuel management, and site restoration conditions would be in the best interest of the region. As a result, when Entergy announced in August, 2013 that Vermont Yankee would permanently cease generating power by the end of December, 2014, the WRC had a good sense as to what the impacts would be and what closure and decommissioning scenarios would best mitigate those impacts. We shared this information with our towns, state officials and agencies, and our counterparts in New Hampshire and Massachusetts.” WRC Newsletter, “WRC Receives National Association of Development Organizations 2014 Innovation Award...” January 2015, available at <http://archive.constantcontact.com/fs112/1118984881468/archive/1119706876960.html>. I note that the WRC received an award from the National Association of Development Organization for the group’s efforts to share “lessons learned” on nuclear plant decommissioning.

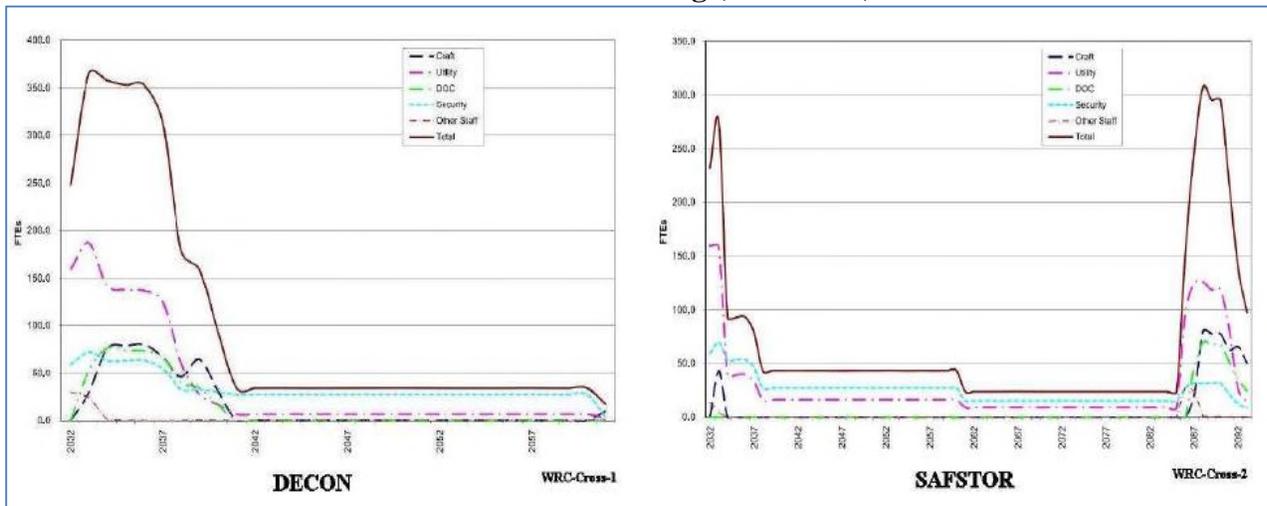
⁸⁰ “Vermont Yankee Closure” website, SWRPC, available at <http://www.swrpc.org/VermontYankee/>.

⁸¹ Lessons Learned Report at 12.

1 about 250 over a 9-12 month period. With SAFSTOR, after a brief
 2 ramp up to button up the plant, the workforce would quickly drop
 3 further to about 50 people. VY is currently transitioning into
 4 SAFSTOR and as was mentioned previously, the number of
 5 employees will ramp down to approximately 24 staff, primarily to
 6 provide security. With DECON or prompt decommissioning, the
 7 station initially employs a larger workforce of approximately 300,
 8 which then dissipates more slowly over approximately ten years.
 9 Economic impact studies provided by Entergy in the docket
 10 suggested that DECON provides a stronger buffer against overall
 11 job loss than SAFSTOR.

12 The more gradual falloff of economic activity associated with
 13 DECON offers the region social, economic and fiscal benefits that
 14 SAFSTOR does not.⁸²

Figure SFT-3
Timing of Employment at Vermont Yankee in Early Versus Delayed
Decommissioning (2012-2075)



Source: Lessons Learned Report at 13, displaying graphs originally provided by Entergy. Note that the schedule shown here depicts the maximum decommissioning schedule originally anticipated by Entergy, which has been shortened since then, as described in the testimony of Mr. Scheurich.

⁸² Lessons Learned Report at 13.

1 In their prefiled testimony, Mr. State and Mr. Scheurich provide more up-to-date
2 information that will enable the Board to compare the impacts that would result from the
3 Proposed Transaction relative to the possibility that Entergy might be able to advance this
4 timeline. Additionally, Dr. Berkman's economic study examines the direct, indirect and
5 induced effects of these different decommissioning schedules, and found that although
6 the NorthStar approach would account for fewer jobs, it would lead to up to higher
7 overall economic benefits in terms of higher contributions to Vermont's Gross State
8 Product and tax revenues.⁸³ I point out here simply the fact that there are expressions in
9 the local community that would support a more expeditious decommissioning process.

10 **Q31. What do you conclude from your review of these other non-energy factors?**

11 A31. I conclude that there is strong support in the local community for the Board to give great
12 weight to the value of prompt decommissioning – something that promises to be
13 accomplished through the Proposed Transaction.

14 **Q32. Please summarize your key conclusions.**

15 A32. My most important conclusions are as follows:

- 16 - There are significant, relevant regulatory policy directions and precedents
17 for the Board's review of the Proposed Transaction and its promotion of
18 the public good.
- 19 - Even though this is not an energy proposal *per se*, there are elements of
20 the Proposed Transaction that have the potential to align positively with

⁸³ Berkman Testimony at 4.

1 Vermont's energy and climate-change policies and goals. Once
2 decommissioned and restored in a relatively prompt way, the Vermont
3 Yankee site will provide a potentially attractive brownfield site for
4 locating utility-scale renewable projects with access to New England's
5 high-voltage transmission grid. At worst, the Proposed Transaction does
6 not conflict with those goals of the State. This supports a Board finding
7 that the Proposed Transaction promotes the public good.

8 - There are also non-energy aspects of the Petitioners' plan that are relevant
9 to the Board's decision on whether the Proposed Transaction supports the
10 public good. There are many relatively recent studies and local
11 stakeholder statements that support an earlier decommissioning schedule
12 for a variety of economic, aesthetic and other reasons. These provide
13 evidence that public policy and community values support a finding that
14 earlier decommissioning is in the public good.

15 - As the Board determines whether this Proposed Transaction promotes the
16 general good of the state, I encourage the Board to give considerable
17 weight to these issues: alignment with Vermont's energy goals, alignment
18 with community values, economic impacts on employment and the local
19 economy and contribution to orderly development of Vermont's economy,
20 and impacts on the environment, aesthetics and inter-generational equity.

21

1 Q33. **Does that conclude your testimony?**

2 A33. Yes, at this time.

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